BIOLOGICAL RESOURCES ASSESSMENT FOR THE CANNABIS CULTIVATION OPERATION AT 1111 SULPHUR BANK DRIVE, CLEARLAKE OAKS, CALIFORNIA

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1. INTRODUCTION

1.1. PROJECT LOCATION AND DESCRIPTION

Natural Investigations Company conducted a biological resources assessment for a cannabis cultivation operation on a 77-acre parcel (APN 006-520-11) at 1111 Sulphur Bank Drive, Clearlake Oaks, California. The proposed project is a cannabis cultivation operation in a 2-acre cultivation compound that is located on a livestock pasture. A second cultivation compound (6 acres) was also identified that may be used as an alternate or expanded facility. For this assessment, the Project Area was defined as the cultivation areas plus the ancillary facilities, and this 8.1-acre area was the subject of the impact analysis. The entire 77-acre property was defined as the Study Area. The Study Area is defined to identify biological resources adjacent to the Project Area, and is the area subject to potential indirect effects from Project implementation.

1.2. PURPOSE AND SCOPE OF ASSESSMENT

This Biological Resources Assessment was prepared to assist in compliance with the California Environmental Quality Act and the state and federal Endangered Species Acts. This assessment also functions to fulfill requirements for obtaining enrollment (a Notice of Applicability) in the State Water Resources Control Board's Order WQ 2019-0007-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order).

This assessment provides information about the biological resources within the Study Area, the regulatory environment affecting such resources, any potential Project-related impacts upon these resources, and finally, to identify mitigation measures and other recommendations to reduce the significance of these impacts. The specific scope of services performed for this assessment consisted of the following tasks:

- Compile all readily-available historical biological resource information about the Study Area;
- Spatially query state and federal databases for any occurrences of special-status species or habitats within the Study Area and vicinity;
- Perform a reconnaissance-level field survey of the Study Area, including photographic documentation;
- Inventory all flora and fauna observed during the field survey;
- Characterize and map the habitat types present within the Study Area, including any potentially-jurisdictional water resources;
- Evaluate the likelihood for the occurrence of any special-status species;
- Assess the potential for the Project to adversely impact any sensitive biological resources;
- Recommend mitigation measures designed to avoid or minimize Project-related impacts; and
- Prepare and submit a report summarizing all of the above tasks.

The scope of services does not include other services that are not described in this Section, such as formal aquatic resource delineations or protocol-level surveys for special-status species.

1.3. REGULATORY SETTING

The following section summarizes some applicable regulations of biological resources on real property in California.

1.3.1. Special-status Species Regulations

The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service implement the Federal Endangered Species Act of 1973 (FESA) (16 USC §1531 et seq.). Threatened

and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from "take" (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act of 1970 (CESA) (California Fish and Game Code §2050 *et seq*., and CCR Title 14, §670.2, 670.51) prohibits "take" (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to requirements of CESA, an agency reviewing proposed projects within its jurisdiction must determine whether any state-listed species may be present in the Study Area and determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Game Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 *et seq*.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs. Fish and Game Code §3511 designates certain bird species "fully protected", making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines "rare" in a broader sense than the definitions of threatened, endangered, or fully protected. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under

CEQA if the species can be shown to meet the criteria for listing. Plant species on the California Native Plant Society (CNPS) Lists 1A, 1B, or 2 are typically considered rare under CEQA. California "Species of Special Concern" is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

1.3.2. Water Resource Protection

Real property that contains water resources are subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described next.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into "waters of the United States". Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The US Army Corps of Engineers (USACE) is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts is required as a condition of the CWA Section 404 Permit and may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations.

Section 10 of the Rivers and Harbors Act of 1899 requires approval from USACE prior to the commencement of any work in or over navigable Waters of the US, or which affects the course, location, condition or capacity of such waters. Navigable waters of the United States are defined as waters that have been used in the past, are now used, or are susceptible to use, as a means to transport interstate or foreign commerce up to the head of navigation. Rivers and Harbors Act Section 10 permits are required for construction activities in these waters.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating "*any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake*." CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a proposed project will result in the alteration or degradation of ''waters of the State". The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the "stream zone", defined as "*that portion of the stream channel that restricts lateral movement of water*" and delineated at "*the top of the bank or the outer edge of any riparian vegetation, whichever is more landward*". CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

For construction projects that disturb one or more acres of soil, the landowner or developer must obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ).

The State Water Resources Control Board's Order WQ 2019-0007-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities protects receiving water bodies from water-quality impacts associated with cannabis cultivation using a combination of Best Management Practices, buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and regulatory oversight.

1.3.3. Tree Protection

At the State level, in areas inside timberland, any tree removal is subject to the conditions and requirements set forth in the Z'berg-Nejedly Forest Practice Act and the California Forest Practice Rules. If development of a project will result in the removal of commercial tree species, one of the following permits is needed: Less than 3 Acre Conversion Exemption; Christmas Tree; Dead, Dying or Diseased, Fuelwood, or Split Products Exemption; a Public Agency, Public and Private Utility Right of Way Exemption; a Notice of Exemption from Timberland Conversion Permit for Subdivision; or an Application for Timberland Conversion Permit.

Lake County does not have a specific ordinance protecting native trees. However, under the Cannabis Ordinance 3084, Section 4, Subsection iii) Prohibited Activities (a) Tree Removal, Lake County restricts tree removal as follows:

> *"The removal of any commercial tree species as defined by the California Code of Regulations section 895.1, Commercial Species for the Coast Forest District and Northern Forest District, and the removal of any true oak species (Quercus species) or Tan Oak (Notholithocarpus species) for the purpose of developing a cannabis cultivation site should be avoided and minimized. This shall not include the pruning of any such tree species for the health of the tree or the removal of such trees if necessary for safety or disease concerns."*

During the permitting process, Lake County requires mitigation for the removal of protected trees; typical mitigation is tree replacement at a ratio of 2:1 or 3:1.

ENVIRONMENTAL SETTING
The Study Area is located within the Inner North Coast Range geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Study Area and vicinity is in climate Zone 14 "Northern California's Inland Areas with Some Ocean Influence", with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Sunset, 2020).

The topography of the Study Area is a west-facing slope of the foothills of the mountains ringing Clear Lake. The elevation ranges from approximately 1,350 feet to 1,410 feet above mean sea level. Drainage runs east, and flows into Clear Lake. Prior to the establishment of this cultivation operation, land uses were livestock pasture and stables.

2. METHODOLOGY

2.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- Any readily-available previous biological resource studies pertaining to the Study Area or vicinity
- United States Geologic Service (USGS) 7.5 degree-minute topographic quadrangles of the Study Area and vicinity
- Aerial photography of the Study Area
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription
- USFWS species list (IPaC Trust Resources Report).

2.2. FIELD SURVEY

Consulting biologist Tim Nosal, MS. conducted a reconnaissance-level field survey on March 30, 2020. A complete coverage, variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible fauna and flora observed were recorded in a field notebook, and identified to the lowest possible taxon. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Study Area and those species on the USFWS species list (Appendix 1).

When a specimen could not be identified in the field, a photograph or voucher specimen (depending upon permit requirements) was taken and identified in the laboratory using a dissecting scope where necessary. Dr. Graening holds the following scientific collection permits: CDFW Scientific Collecting Permit No. SC-006802; and CDFW Plant Voucher Specimen Permit 09004. Tim Nosal holds CDFW Plant Voucher Specimen Permit 2081(a)-16-102-V. Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2020); CDFW (2020b,c); NatureServe 2020; and University of California at Berkeley (2020a,b).

The locations of any special-status species sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Habitat types occurring in the Study Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. The Study Area was also informally assessed for the presence of potentially-jurisdictional water features, including riparian zones, isolated wetlands and vernal pools, and other biologically-sensitive aquatic habitats

2.3. MAPPING AND OTHER ANALYSES

Locations of species' occurrences and habitat boundaries within the Study Area were digitized to produce the final habitat maps. The boundaries of potentially jurisdictional water resources within the Study Area were identified and measured in the field, and similarly digitized to calculate acreage and to produce informal delineation maps. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Informal wetland delineation methods consisted of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the US Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Wildlife habitats were classified according to the CDFW's California Wildlife Habitat Relationships System (CDFW, 2020c). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2020), Calflora (2020); CDFW (2020a,b,c); and University of California at Berkeley (2020a,b).

3. RESULTS

3.1. INVENTORY OF FLORA AND FAUNA FROM FIELD SURVEY

All plants detected during the field survey of the Study Area are listed in Appendix 2. The following animals were detected within the Study Area during the field survey: Northern Pacific treefrog (*Pseudacris regilla*); Botta's pocket gopher (*Thomomys bottae*); California ground squirrel (*Otospermophilus beecheyi*); cattle (*Bos taurus*); Columbian black-tailed deer (*Odocoileus hemionus columbianus*); coyote (*Canis latrans*); dog (*Canis lupis familiaris*); sheep (*Ovis aries*); acorn woodpecker (*Melanerpes formicivorus*); American crow (*Corvus brachyrhynchos*); bushtit (*Psaltriparus minimus*); California scrub jay (*Aphelocoma californica*); California towhee (*Melozone crissalis*); Canada goose (*Branta canadensis*); common raven (*Corvus corax*); Eurasian collared-dove (*Streptopelia decaocto*); mallard (*Anas platyrhynchos*); mourning dove (*Zenaida macroura*); Nuttall's woodpecker (*Picoides nuttallii*); oak titmouse (*Baeolophus inornatus*); red-tailed hawk (*Buteo jamaicensis*); red-winged blackbird (*Agelaius phoeniceus*); sparrow (Emberizidae); turkey vulture (*Cathartes aura*); white-breasted nuthatch (*Sitta carolinensis*) and other common songbirds.

3.2. VEGETATION COMMUNITIES AND WILDLIFE HABITAT TYPES

3.2.1. Terrestrial Vegetation Communities

The Study Area contains the following terrestrial vegetation communities, which are discussed here and are delineated in the Exhibits:

Ruderal/Disturbed: These areas consist of disturbed or converted natural habitat that is now either in ruderal state, graded, or urbanized with gravel roads, or structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive species or ornamental plants lacking a consistent community structure. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages.

Annual Grassland: The flatter topography of the parcel consists largely of annual grassland habitat, heavily grazed by sheep and cattle. This vegetation is comprised of non-native grasses and native and non-native herbs including hare wall barley (*Hordeum murinum*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), white clover (*Trifolium repens*), shepherd's purse (*Capsella bursa-pastoris*), fillaree (*Erodium* spp), henbit (*Lamium amplexicaule*), Menzies fiddleneck (*Amsinckia menziesii*), and miner's lettuce (*Claytonia perfoliata*). This vegetation can be classified as the Holland Type "Non-native Grassland," and "Annual grassland" habitat type by CDFW's WHR.

Mixed Oak Woodland: The majority of the Study Area is vegetated with oak woodland habitat. The open canopy of the woodland is comprised of blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*) and occasional two-petaled ash (*Fraxinus dipetala*). The understory within this habitat consists of poison-oak (*Toxicodendron diversilobum*), hare wall barley, soft chess, ripgut brome, hedgehog dogtail grass (*Cynosurus echinoides*), miner's lettuce (*Claytonia* spp.), milk thistle (*Silybum marinum*), chickweed (*Stellaria media*) and other annual grasses and herbs.. This vegetation can be classified as "*Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*) Forest Alliance (Sawyer et al, 2009)" or as the Holland Type "Oak Forest".

3.2.2. Wildlife Habitat Types

Wildlife habitat types were classified using CDFW's Wildlife Habitat Relationship System. The Study Area contains the following wildlife habitat types: Montane Hardwood; Annual Grassland; Fresh Emergent; Pasture; and Urban.

3.2.3. Critical Habitat and Special-status Habitat

No critical habitat for any federally-listed species occurs within the Study Area. No special-status habitats were detected within the Study Area during the field survey. The CNDDB reported no special-status habitats within the Study Area. The CNDDB reported the following special-status habitats in a 10-mile radius outside of the Study Area: Clear Lake Drainage Resident Trout Stream; Clear Lake Drainage Cyprinid/Catostomid Stream; Clear Lake Drainage Seasonal Lakefish Spawning Stream; Northern Basalt Flow Vernal Pool; Northern Volcanic Ash Vernal Pool; Coastal and Valley Freshwater Marsh and Great Valley Mixed Riparian Forest.

3.2.4. Habitat Plans and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human disturbance, but natural barriers such as rugged terrain and abrupt changes in vegetation cover are also possible. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations.

Although there are no designated wildlife corridors, the open space within the Study Area allows unrestricted animal movement. No fishery resources exist in the Study Area, but Clear Lake is a fishery resource. The Study Area is not located within any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

3.3. LISTED SPECIES AND OTHER SPECIAL-STATUS SPECIES

For the purposes of this assessment, "special status" is defined to be species that are of management concern to state or federal natural resource agencies, and include those species that are:

- Listed as endangered, threatened, proposed, or candidate for listing under the Federal Endangered Species Act;
- Listed as endangered, threatened, rare, or proposed for listing, under the California Endangered Species Act of 1970;
- Designated as endangered or rare, pursuant to California Fish and Game Code (§1901);
- Designated as fully protected, pursuant to California Fish and Game Code (§3511, §4700, or §5050);
- Designated as a species of special concern by CDFW;
- Plants considered to be rare, threatened or endangered in California by the California Native Plant Society (CNPS); this consists of species on Lists 1A, 1B, and 2 of the CNPS Ranking System; or
- Plants listed as rare under the California Native Plant Protection Act.

3.3.1. Reported Occurrences of Listed Species and Other Special-status Species

A list of special-status plant and animal species that have occurred within the Study Area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the Study Area;
- Informal consultation with USFWS by generating an electronic Species List (Information for Planning and Conservation website at https://ecos.fws.gov/ipac/); and
- A spatial query of the CNDDB.

The CNDDB was queried and any reported occurrences of special-status species were plotted in relation to the Study Area boundary using GIS software (see exhibits).

The CNDDB reported 4 special-status species occurrences within the Study Area: eel-grass pondweed (*Potamogeton zosteriformis*); Townsend's big-eared bat (*Corynorhinus townsendii*); pallid bat (*Antrozous pallidus*) and osprey (*Pandion haliaetus*). Three of these occurrences are an artifact of the mapping process that maps imprecise or vague locations, and are not likely to occur on site. Suitable habitat for three of the species (eel-grass pondweed, Townsend's big-eared bat and pallid bat) is not found on site. Suitable nesting habitat for the osprey is on site, although no nest was observed during the field survey. Within a 10-mile buffer of the Study Area boundary, the CNDDB reported several special-status species occurrences, summarized in the following table.

A USFWS species list was generated online using the USFWS' IPaC Trust Resource Report System (see Appendix 1). This list is generated using a regional and/or watershed approach and does not necessarily indicate that the Study Area provides suitable habitat. The following listed species should be considered in the impact assessment:

- Northern Spotted Owl (*Strix occidentalis caurina*) Threatened
- California Red-legged Frog (*Rana draytonii*) Threatened
- Delta Smelt (*Hypomesus transpacificus*) Threatened
- Burke's Goldfields (*Lasthenia burkei*) Endangered

Migratory birds should also be considered in the impact assessment.

Table 1. Special-status Species Reported by CNDDB in the Vicinity of the Study Area

Common Name Scientific Name	Status*	General Habitat	Microhabitat
Red-bellied newt *Taricha rivularis*	CSSC	Found in coastal woodlands and redwood forests along the coast of Northern California	A stream or river dweller. Larvae retreat into veg and under stones during the day.
Foothill yellow-legged frog *Rana boylii*	CCT/CSSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.
Osprey *Pandion haliaetus*	WL	Ocean shore, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.
Golden eagle *Aquila chrysaetos*	FP; WL	Rolling foothills, mountain areas, sage-juniper flats, & desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Prairie falcon *Falco mexicanus*	WL	Inhabits dry, open terrain, either level or hilly.	Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.
Western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT/CE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.
Clear Lake hitch *Lavinia exilicauda chi*	CT	Found only in Clear Lake, Lake Co, and associated ponds. Spawns in streams flowing into Clear Lake.	Adults found in the limnetic zone. Juveniles found in the nearshore shallow-water habitat hiding in the vegetation.
Sacramento perch *Archoplites interruptus*	CSSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley.	Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of physio-chemical water conditions.
Townsend's big-eared bat *Corynorhinus townsendii*	CSSC	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.
Pallid bat *Antrozous pallidus*	CSSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
North American porcupine *Erethizon dorsatum*	CSSC	Coast ranges, Klamath Mountains, southern Cascades, Modoc Plateau, Sierra Nevada and Transverse Ranges.	Montane conifer and wet meadow habitats.
Western pond turtle *Emys marmorata*	CSSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, be	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying
An isopod *Calasellus californicus*	CSSC	Known from Lake, Napa, Marin, Santa Cruz and Santa Clara Counties.	
Brownish dubiraphian riffle beetle *Dubiraphia brunnescens*	CSSC	Aquatic; known only from the NE shore of Clear Lake, Lake County.	Inhabits exposed, wave-washed willow roots.
Wilbur Springs shorebug *Saldula usingeri*	CSSC	Requires springs/creeks with high concentrations of Na, Cl, & Li.	Found only on wet substrate of spring outflows.
Obscure bumble bee *Bombus caliginosus*	CSSC		
Borax Lake cuckoo wasp *Hedychridium milleri*	CSSC	Endemic to Central California. Only collection is from the type locality.	External parasite of wasp and bee larva.
Clear Lake pyrg *Pyrgulopsis ventricosa*	CSSC	Restricted to Seigler Creek drainage in the south end of the Clear Lake Basin.	Freshwater.
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pools.	Volcanic ash flow vernal pools. 460-855 m.

Small-flowered calycadenia *Calycadenia micrantha*	1B.2	Chaparral, valley and foothill grassland, meadows and seeps.	Rocky talus or scree; sparsely vegetated areas. Occasionally on roadsides; sometimes on serpentine. 5-1500 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral.	Serpentine and volcanic substrates, generally in shrubby vegetation. 80-1005 m.
Pappose tarplant *Centromadia parryi ssp. parryi*	1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland.	Vernally mesic, often alkaline sites. 2-420m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Vernal pools, meadows and seeps.	Most often in vernal pools and swales. 15-600 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral.	Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Cismontane woodland, valley and foothill grassland.	50-500m.
Watershield *Brasenia schreberi*	2B.3	Freshwater marshes and swamps.	Aquatic from water bodies both natural and artificial in California.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland, valley and foothill grasslands.	Lake margins and vernal pools.
Legenere *Legenere limosa*	1B.1	Vernal pools.	In beds of vernal pools. 1-880 m.
San Joaquin spearscale *Extriplex joaquinana*	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland.	In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 1-835 m.
Oval-leaved viburnum *Viburnum ellipticum*	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland.	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 365-790 m.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	1B.1	Chaparral, lower montane coniferous forest.	Rocky, serpentine sites. Slopes and ridges. 450-1000 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	Volcanic soils. 395-1615 m.
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland, valley and foothill grassland, chaparral.	Commonly on serpentine in grassland or openings in chaparral. 180-1000 m.
Anthony Peak lupine *Lupinus antoninus*	1B.2	Upper montane coniferous forest, lower montane coniferous forest.	Open areas with surrounding forest; rocky sites. 1220-2285 m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chapparal, cismontane woodland, valley and foothill grassland, vernal pools.	Vernally wet areas, ditches, and ponds. 60-1335 m.
Glandular western flax *Hesperolinon adenophyllum*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils; generally found in sepentine chaparral. 150-1315 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Serpentine chaparral.	Serpentine barrens at edge of chaparral. 60-1005 m.
Drymaria-like western flax *Hesperolinon drymarioides*	1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils, mostly within chaparral. 390-1000m.
Sharsmith's western flax *Hesperolinon sharsmithiae*	1B.2	Chaparral.	Serpentine substrates. 270-300 m.
Marsh checkerbloom *Sidalcea oregana ssp.*	1B.2	Meadows and seeps, riparian forest.	Wet soil of streambanks, meadows. 1100-2300 m.

hydrophila			
Brandegee's eriastrum *Eriastrum brandegeeae*	1B.1	Chaparral, cismontane woodland.	On barren volcanic soils; often in open areas. 425-840 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils. 5-1740 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pools.	Volcanic ash flow, and volcanic substrate vernal pools. 400-855 m.
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	Vernal pools.	Volcanic ash flow vernal pools. 30-950 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.	Grassy margins of vernal pools and meadows. 450-1100 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral, meadows and seeps, valley and foothill grassland.	Openings in chaparral or grasslands. On serpentine. 20-900 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Marshes and swamps (freshwater), vernal pools.	Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.
Adobe-lily *Fritillaria pluriflora*	1B.2	Chaparral, cismontane woodland, foothill grassland.	Usually on clay soils; sometimes serpentine. 60-705 m.
California satintail *Imperata brevifolia*	2B.1	Coastal scrub, chaparral, riparian scrub, mojavean scrub, meadows and seeps (alkali), riparian scrub.	Mesic sites, alkali seeps, riparian areas. 0-1215 m.
Eel-grass pondweed *Potamogeton zosteriformis*	2B.2	Marshes and swamps.	Ponds, lakes, streams. 0-1860 m.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere. Global Ranking: G1 = Critically Imperiled; G2 = Imperiled; G3 = Vulnerable. State Ranking: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.
**Copied verbatim from CNDDB, unless otherwise noted.

3.3.2. Listed Species or Special-status Species Observed During Field Survey

During the field survey, no special-status species were detected within the Project Area or the surrounding Study Area.

3.3.3. Potential for Listed Species or Special-status Species to Occur in the Study Area

The non-native grasslands within the Study Area have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. The ponds are not permanent waterbodies, and are unlikely to sustain aquatic special-status species. The oak woodland habitat has a moderate potential to sustain special-status species. The woodlands also function as nesting habitat for various bird species, including osprey.

3.4. POTENTIALLY-JURISDICTIONAL WATER RESOURCES

The USFWS National Wetland Inventory reported no water features within the Study Area (see Exhibits).

An informal assessment for the presence of potentially-jurisdictional water resources within the Study Area was also conducted during the field survey. For purposes of this biological site assessment, non-wetland waters were classified using the California Forest Practice Rules. The California Forest Practice Rules define a Class I watercourse as 1) a watercourse providing habitat for fish always or seasonally, and/or 2) providing a domestic water source; a Class II watercourse is 1) a watercourse capable of supporting non-fish aquatic species, or 2) a watercourse within 1000 feet of a watercourse that seasonally or always has fish present; a Class III watercourse is a watercourse with no aquatic life present and that shows evidence of being capable of transporting sediment to Class I and Class II waters during high water flow conditions.

The field survey determined that the Project Area does not contain any channels or wetlands. The following water features were detected within the larger Study Area during the field survey (see Exhibits): 1 ephemeral pond; and 1 intermittent pond with lacustrine wetlands (reed marsh).

Note that linear features on the aerial that appear to be watercourses were determined to be upland, grass-lined swales.

There are no vernal pools or other isolated wetlands in the Study Area.

4. IMPACT ANALYSES AND MITIGATION MEASURES

This section establishes the impact criteria, then analyzes potential Project-related impacts upon the known biological resources within the Study Area, and then suggests mitigation measures to reduce these impacts to a less-than-significant level.

4.1. IMPACT SIGNIFICANCE CRITERIA

The significance of impacts to biological resources depends upon the proximity and quality of vegetation communities and wildlife habitats, the presence or absence of special-status species, and the effectiveness of measures implemented to protect these resources from Project-related impacts. As defined by CEQA, the Project would be considered to have a significant adverse impact on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by USFWS or CDFW
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by USFWS or CDFW
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any county or municipal policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved governmental habitat conservation plan.

4.2. IMPACT ANALYSIS

The following discussion evaluates the potential for Project-related activities to adversely affect biological resources. The Project boundaries were digitized and then overlaid on the habitat map using GIS to quantify potential impacts. Historical aerial photos were also analyzed for changes in land use.

4.2.1. Potential Direct / Indirect Adverse Effects Upon Special-status Species

- *Will the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

No special-status species were detected within the Project Area or surrounding Study Area. The non-native grasslands within the Study Area have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. The ponds are not permanent waterbodies, and are unlikely to sustain aquatic special-status species. The oak woodland habitat has a moderate potential to sustain special-status species. The woodlands also function as nesting habitat for various bird species, including osprey.

The project areas are 700 feet from the nearest pond and wetland, and at least as far from the nearest channel. The project will be established in pasture land and avoid the oak woodlands. As designed, no

special-status species will be impacted. If future cultivation operations expand into the oak woodlands, a pre-construction special-status species survey is recommended.

Recommended Mitigation Measures

The Study Area contains suitable nesting habitat for various bird species because of the presence of trees and poles. However, no nests or nesting activity was observed in the project area during the field survey. Trees must be inspected for the presence of active bird nests before tree felling or ground clearing. If active nests are present in the project area during construction of the project, CDFW should be consulted to develop measures to avoid "take" of active nests prior to the initiation of any construction activities. Avoidance measures may include establishment of a buffer zone using construction fencing or the postponement of vegetation removal until after the nesting season, or until after a qualified biologist has determined the young have fledged and are independent of the nest site.

4.2.2. Potential Direct / Indirect Adverse Effects Upon Special-status Habitats or Natural Communities or Corridors

- *Will the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

The Study Area is not within any designated listed species' critical habitat. The Study Area contains one special-status habitat: lacustrine wetlands in the larger of the 2 ponds. Project implementation will not impact any special-status habitats, and maintains a 700-foot vegetative buffer.

Recommended Mitigation Measures

No mitigation is necessary.

4.2.3. Potential Direct / Indirect Adverse Effects On Jurisdictional Water Resources

- *Will the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

There are 2 water resources within the Study Area: 2 stock ponds. Potential adverse impacts to water resources could occur during construction by modification or destruction of stream banks or riparian vegetation, the filling of wetlands, or by increased erosion and sedimentation in receiving water bodies due to soil disturbance. However, the cultivation areas have been designed with 700-foot setbacks from watercourses and situated in flat pasture. Because of these avoidance measures, no impacts to water resources will occur.

If the total area of ground disturbance from installation of the cultivation operation is 1 acre or more, the Cultivator must enroll for coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 2009-0009-DWQ). Implementation of a stormwater pollution prevention plan, and erosion control plan, along with regular inspections, will ensure that construction activities do not pollute receiving waterbodies.

Potential adverse impacts to water resources could occur during operation of cultivation activities resources by discharge of sediment or other pollutants (fertilizers, pesticides, human waste, etc.) into

receiving waterbodies. However, the project proponent must file a Notice of Intent and enroll in Cannabis Cultivation Order WQ 2019-0007-DWQ. Compliance with this Order will ensure that cultivation operations will not significantly impact water resources by using a combination of Best Management Practices (BMPs), buffer zones, sediment and erosion controls, site management plans, inspections and reporting, and regulatory oversight.

It is recommended that a formal delineation of jurisdictional waters be performed before construction work, or ground disturbance, is performed near any watercourse.

Recommended Mitigation Measures

No impacts were identified, and therefore no mitigation measures are proposed.

4.2.4. Potential Impacts to Wildlife Movement, Corridors, etc.

- *Will the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Clear Lake is a fishery. Although no mapped wildlife corridors (such as the California Essential Habitat Connectivity Area layer in CNDDB) exist within or near the Study Area, the open space in the Study Area facilitate animal movement and migrations. While the Study Area may be used by wildlife for movement or migration, the Project would not have a significant impact on this movement because it would not block movement and the majority of the open space in the Study Area would still be available.

Implementation of the proposed project would necessitate erection of security fences around the cultivation compounds. These fences do not allow animal movement and may act as a local barrier to wildlife movement. However, the fenced cultivation areas are surrounded by open space, allowing wildlife to move around these fenced areas. Thus, implementation of the proposed project is a less than significant impact upon wildlife movement. Implementation of the project will not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Recommended Mitigation Measures

No mitigation is necessary.

4.2.5. Potential Conflicts With Ordinances, Habitat Conservation Plans, etc.

- *Will the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- *Will the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Construction of the project will not require the removal of trees protected by Lake County and CALFIRE. The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved governmental habitat conservation plan. The Study Area is not within the coverage area of any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Recommended Mitigation Measures

No mitigation is necessary.

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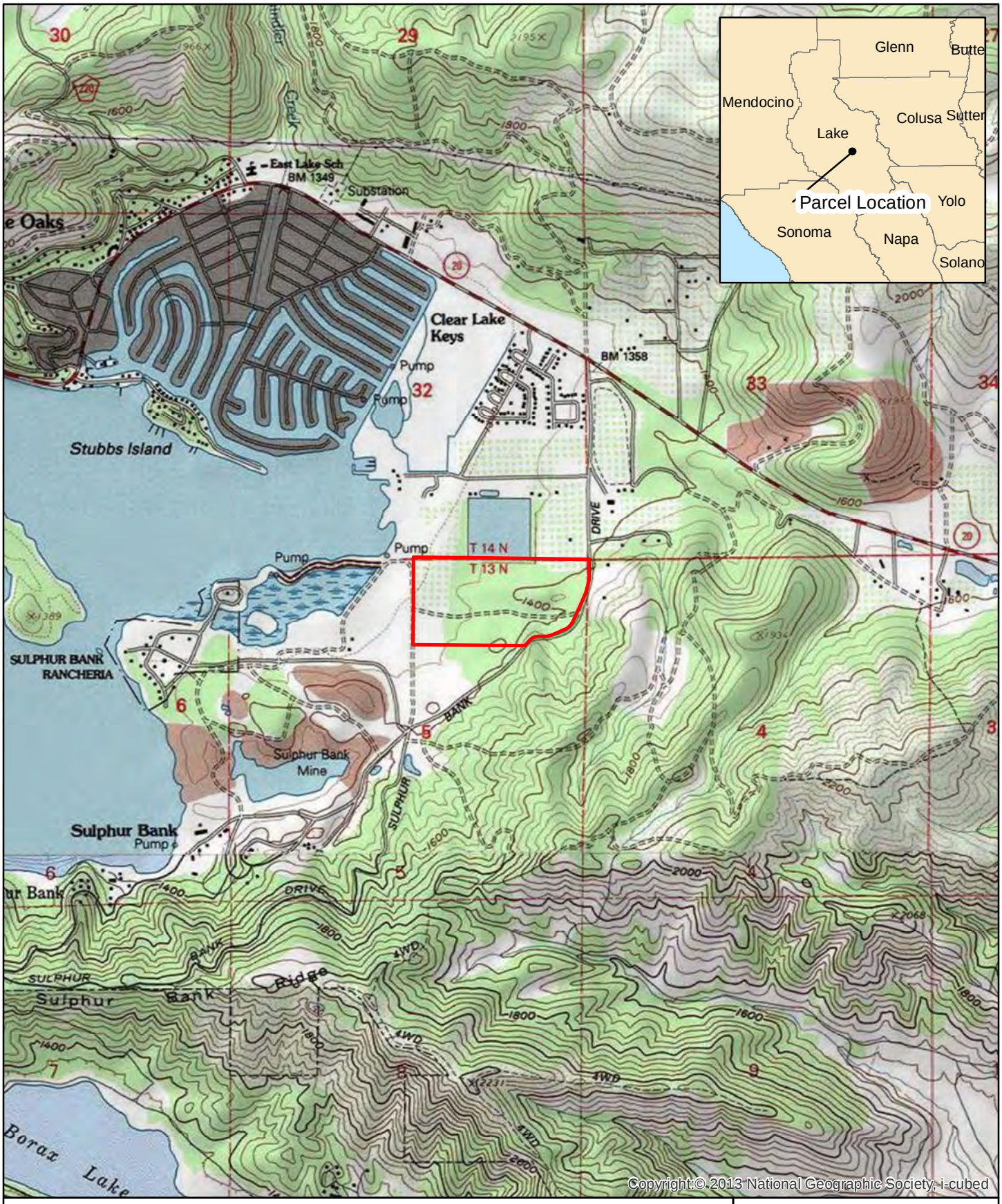
EXHIBITS



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

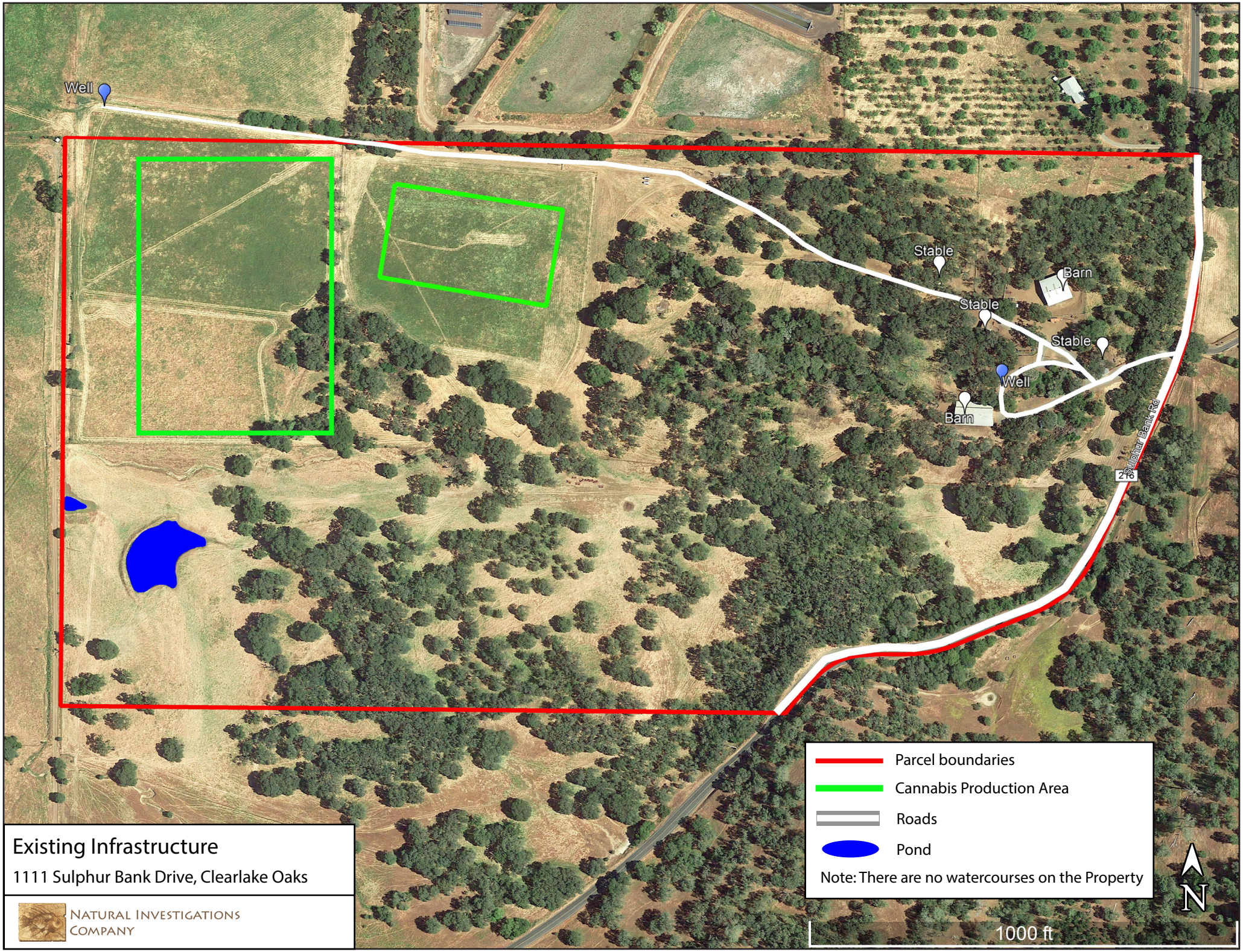
1:24,000

1111 Sulphur Bank Drive
Parcel Location Map

NATURAL INVESTIGATIONS COMPANY

Map Date 3/20/2020

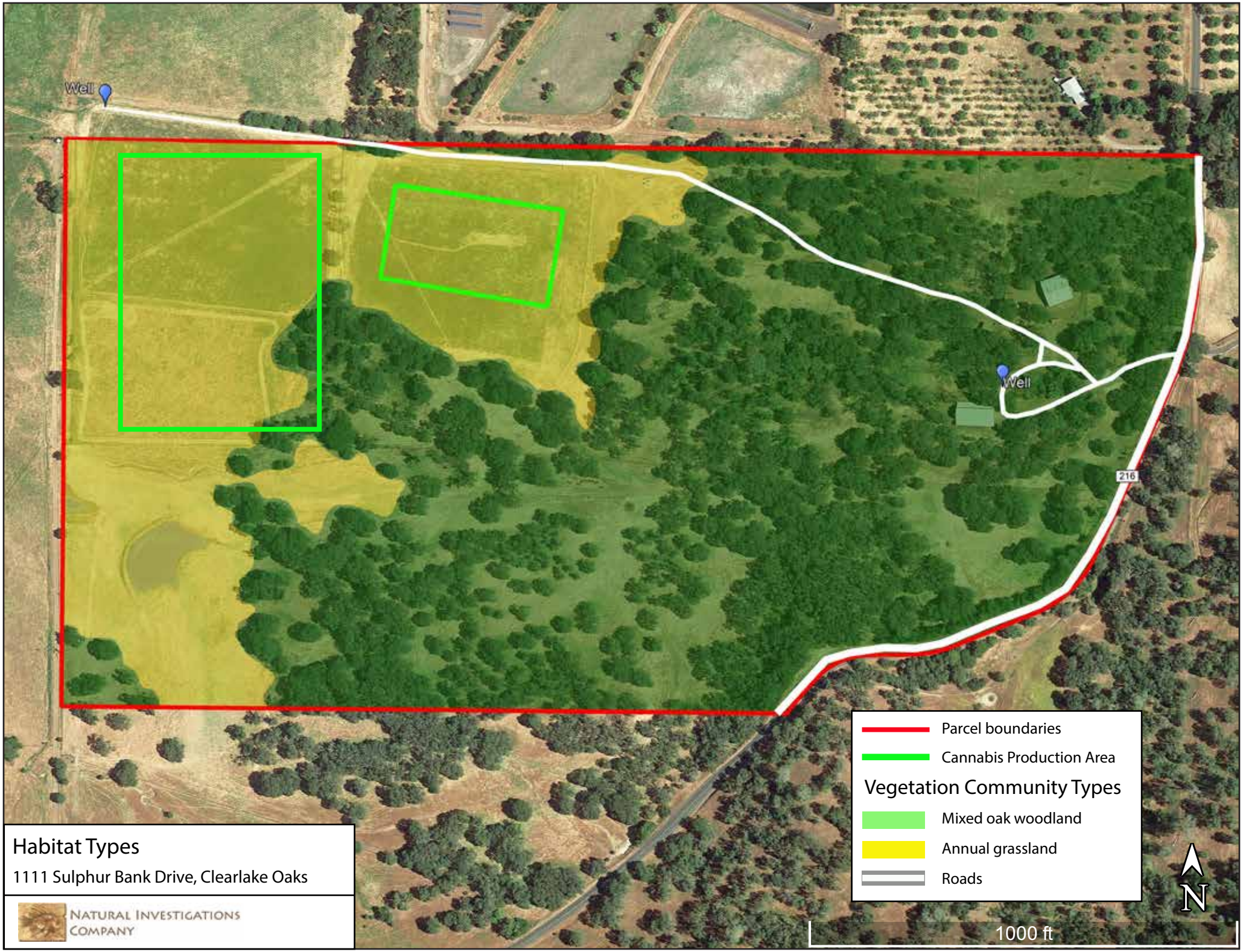
Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5



Existing Infrastructure

1111 Sulphur Bank Drive, Clearlake Oaks

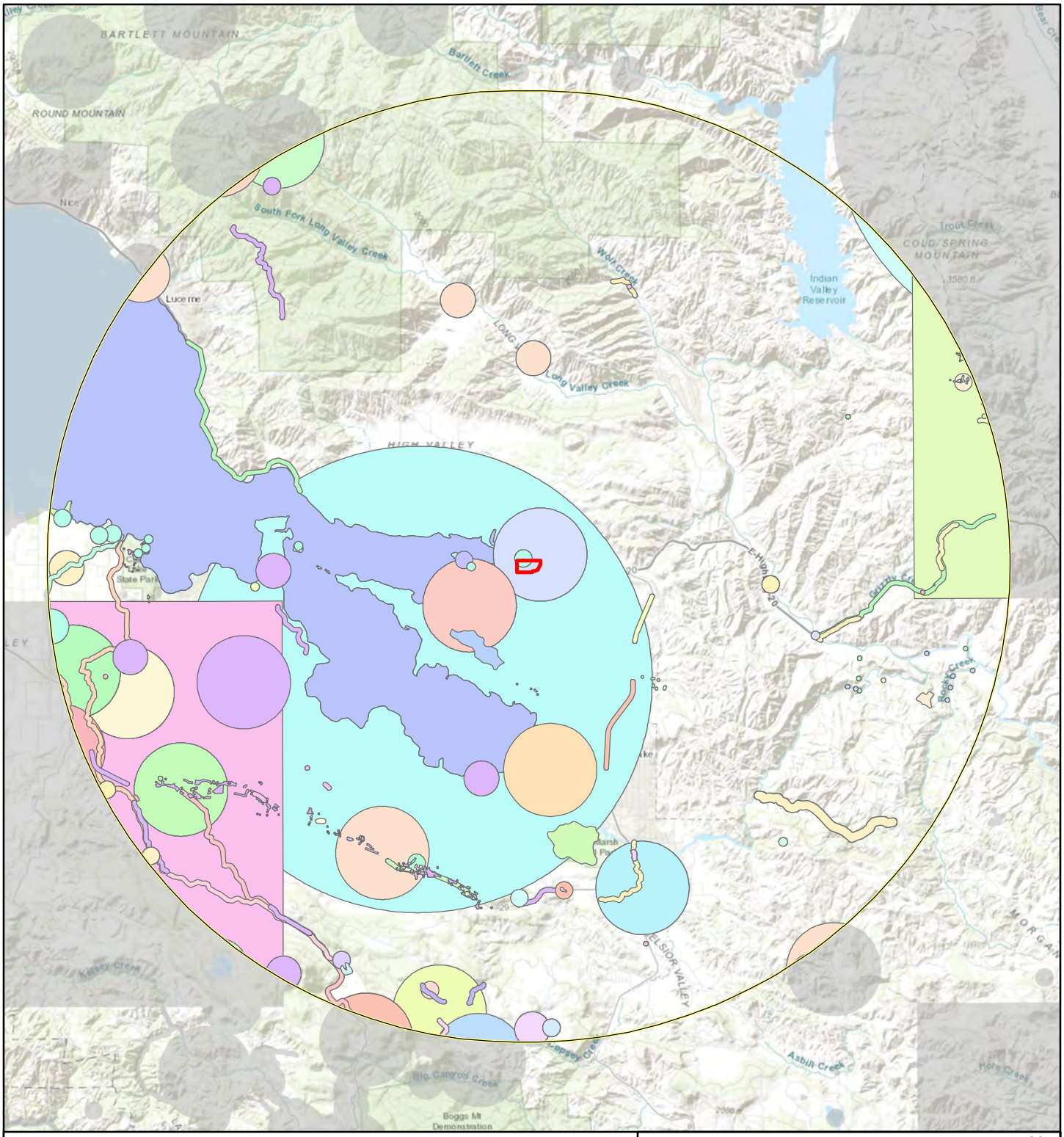
Natural Investigations Company



Habitat Types

1111 Sulphur Bank Drive, Clearlake Oaks

Natural Investigations Company



Parcel Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles

N

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist inshowing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files.The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.Data Sources: California Department of Fish and Wildlife. 2020. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California.
(updated monthly by subscription service)

Special-Status Species Occurrences Map

1111 Sulphur Bank Drive

Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5

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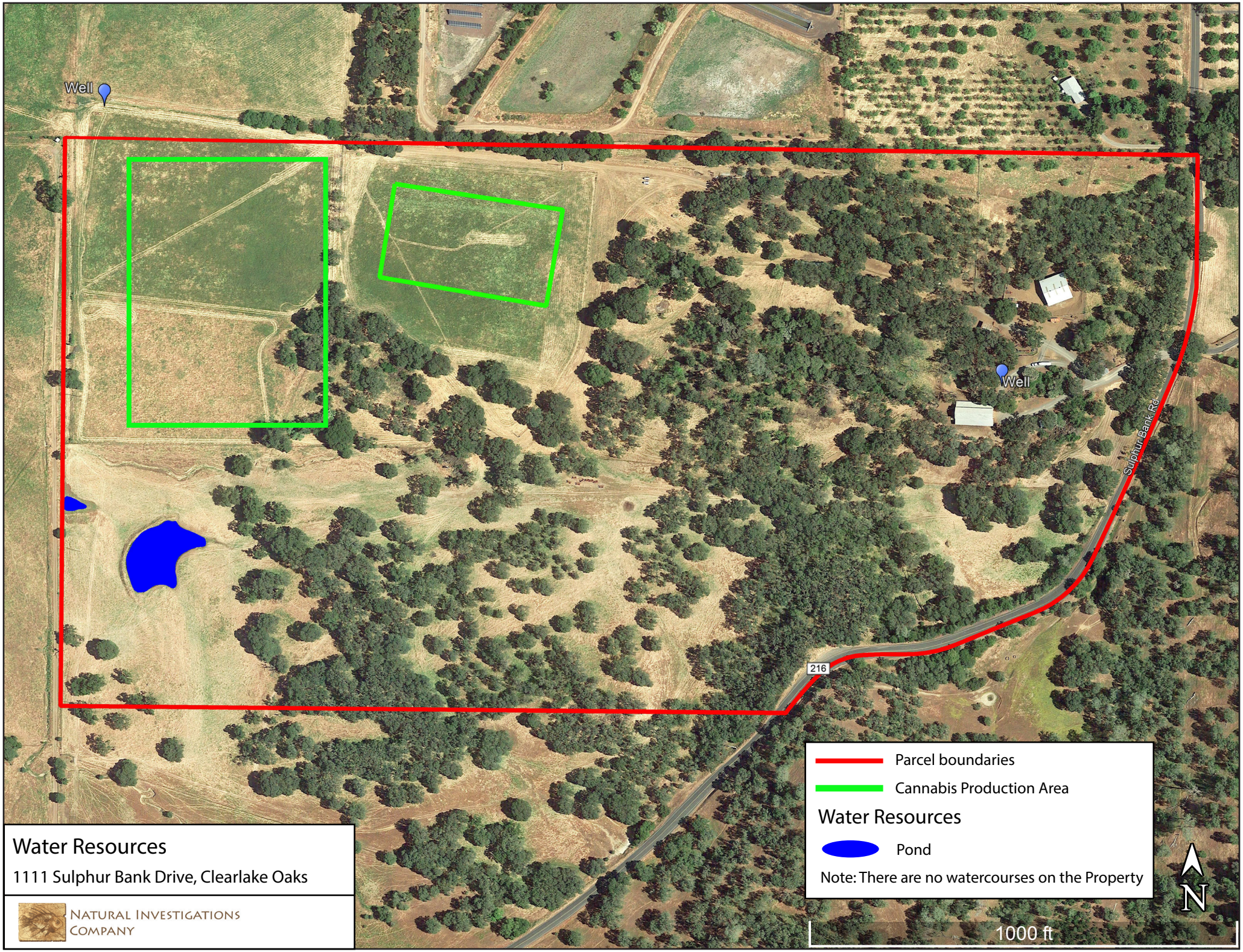
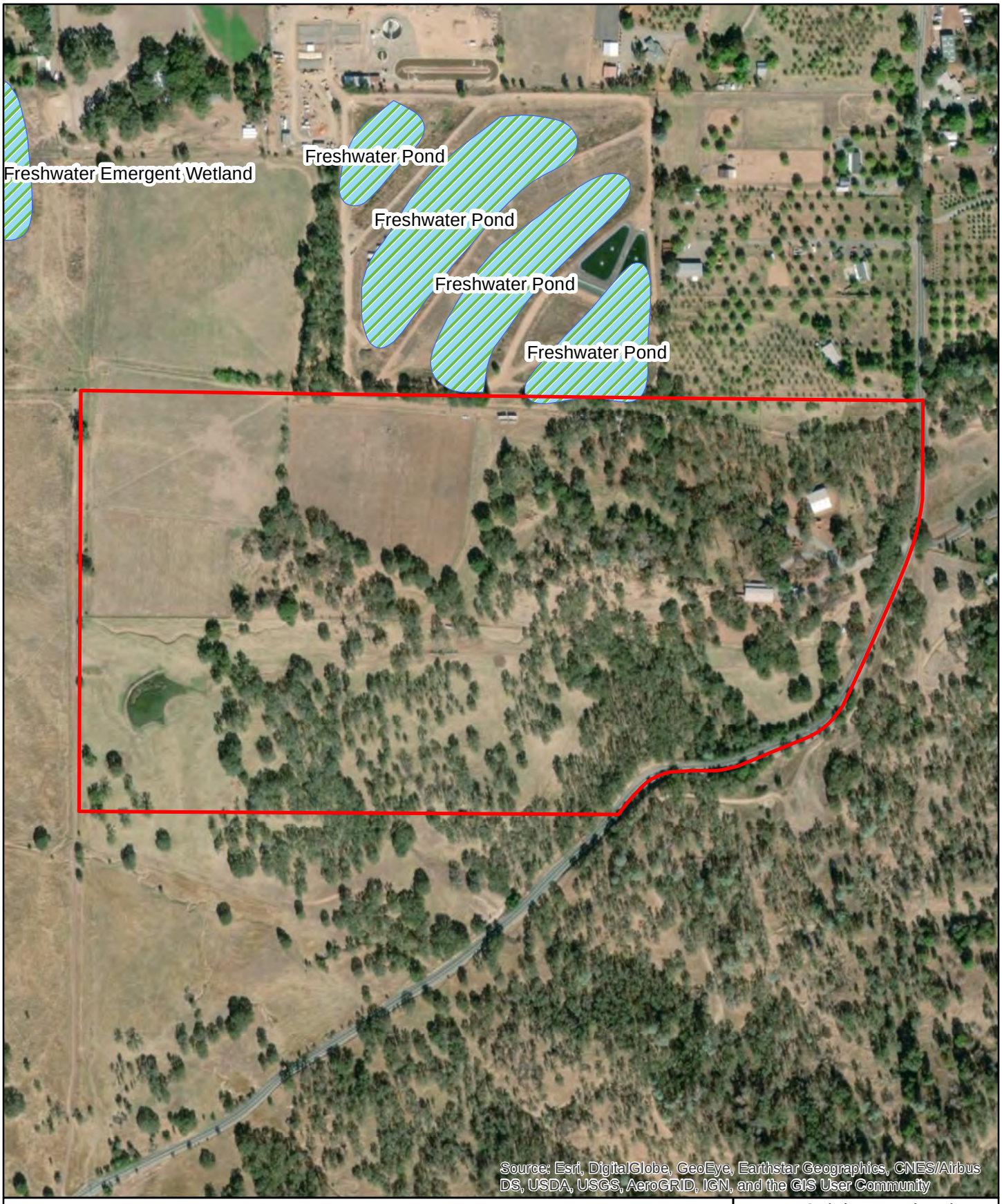

Well
Well
Sulphur Bank Rd
216
Parcel boundaries
Cannabis Production Area
Water Resources
Pond
Note: There are no watercourses on the Property
N
1000 ft
Water Resources
1111 Sulphur Bank Drive, Clearlake Oaks
Natural Investigations Company



Parcel Location

Wetlands and Channels

0 125 250 Meters

0 500 1,000 Feet

1:5,000

1111 Sulphur Bank Drive
National Wetlands Inventory
Features Map

Natural Investigations Company

Map Date 3/20/2020

Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5

APPENDIX 1: USFWS SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:
Consultation Code: 08ESMF00-2020-SLI-1392
Event Code: 08ESMF00-2020-E-04422
Project Name: 1111 Sulphur Bank Drive

March 20, 2020

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1392

Event Code: 08ESMF00-2020-E-04422

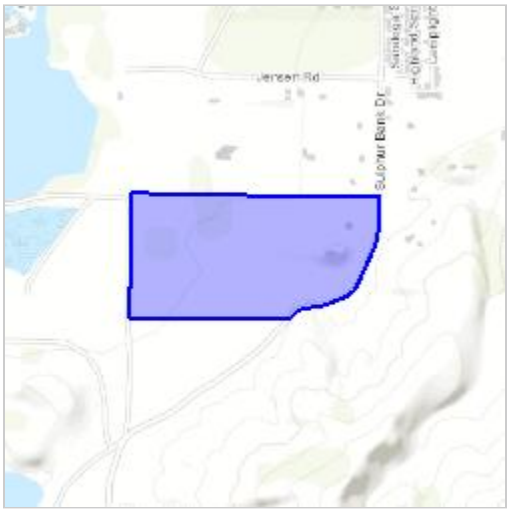
Project Name: 1111 Sulphur Bank Drive

Project Type: ** OTHER **

Project Description: Bio Assessment

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.010372212348614N122.6537608703238W



Counties: Lake, CA

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Northern Spotted Owl *Strix occidentalis caurina*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1123

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2891
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/321

Flowering Plants

NAME	STATUS
Burke's Goldfields *Lasthenia burkei*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4338

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX 2: CHECKLIST OF PLANTS DETECTED IN THE STUDY AREA

Appendix 2:

Plants Observed at 1111 Sulphur Bank Drive, Clearlake Oaks on March 30, 2020

Common Name	Scientific Name
California buckeye	*Aesculus californicus*
Menzie's fiddleneck	*Amsinckia menziesii ssp. menziesii*
Slender wild oat	*Avena barbata*
Common blennosperma	*Blennosperma nanum var. nanum*
Mustard	*Brassica sp*
Brodiaea	*Brodiaea sp.*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
Red maids	*Calandrinia menziesii*
Shepherds purse	*Capsella bursa-pastoris*
Field owl's clover	*Castilleja campestris*
Yellow star thistle	*Centaurea solstitialis*
Sticky mouse-eared chickweed	*Cerastium glomeratum*
Western redbud	*Cercis occidentalis*
Wavy leaved soap plant	*Chlorogalum pomeridianum*
Bull thistle	*Cirsium vulgare*
Narrow leaved miner's lettuce	*Claytonia parviflora*
Miner's lettuce	*Claytonia perfoliata*
Western white clematis	*Clematis ligusticifolia*
Hedgehog dogtail grass	*Cynosurus echinoides*
Pale spikerush	*Eleocharis macrostachya*
Fillaree	*Erodium botrys*
Fillaree	*Erodium cicutarium*
Italian ryegrass	*Festuca perennis*
Two petal ash	*Fraxinus dipetala*
Cleavers	*Galium aparine*
Cut leaf geranium	*Geranium dissectum*
Wand tarplant	*Holocarpha virgata*
Hare wall barley	*Hordeum murinum*
Northern California black walnut	*Juglans hindsii*
English walnut	*Juglans regia*
Henbit	*Lamium amplexicaule*
Shining peppergrass	*Lepidium nitidum*
Common meadowfoam	*Limnanthes douglasii*
Pink honeysuckle	*Lonicera hispidula*
Miniature lupine	*Lupinus bicolor*
Cheese weed	*Malva parviflora*
Horehound	*Marrubium vulgare*
Pineapple weed	*Matricaria discoidea*
Harding grass	*Phalaris aquatica*
Rusty popcorn flower	*Plagiobothrys nothofulvus*
Popcorn flower	*Plagiobothrys sp.*
English plantain	*Plantago lanceolata*
Annual bluegrass	*Poa annua*
Bulbous bluegrass	*Poa bulbosa*
Kentucky bluegrass	*Poa pratensis*
Sierra plum	*Prunus subcordata*
Blue oak	*Quercus douglasii*
Interior live oak	*Quercus wislizeni*

Western buttercup	*Ranunculus occidentalis*
Holly leaf redberry	*Rhamnus ilicifolia*
Himalayan blackberry	*Rubus armeniacus*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Hardstem bulrush	*Schoenoplectus acutus*
California beeplant	*Scrophularia californica*
Old man of spring	*Senecio vulgare*
Milk thistle	*Silybum marinum*
Chickweed	*Stellaria media*
Common snowberry	*Symphoricarpos albus*
Dandelion	*Taraxacum officinalis*
Tall sock destroyer	*Torilis arvensis*
Poison-oak	*Toxicodendron diversilobum*
White clover	*Trifolium repens*
Johnny tuck	*Triphysaria eriantha*
Dwarf nettle	*Urtica urens*
Field speedwell	*Veronica arvensis*

APPENDIX 3: SITE PHOTOS

























BOTANICAL SURVEY REPORT
FOR THE
CANNABIS CULTIVATION OPERATION AT
1111 SULPHUR BANK DRIVE, CLEARLAKE OAKS, CALIFORNIA

July 10, 2021

Prepared by:

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NATURAL INVESTIGATIONS CO.
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1. PROJECT LOCATION AND DESCRIPTION

Property address, APN, acreage, etc.: a 77-acre parcel (APN 006-520-11) at 1111 Sulphur Bank Drive, Clearlake Oaks, California

Brief project description: a cannabis cultivation operation in a 2-acre cultivation compound that is located on a livestock pasture. A second cultivation compound (6 acres) was also identified that may be used as an alternate or expanded facility.

2. BIOLOGICAL SETTING

The Property is located within the Inner North Coast Range geographic subregion, which is contained within the Northwestern California geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012). This region has a Mediterranean-type climate, characterized by distinct seasons of hot, dry summers and wet, moderately-cold winters. The Property and vicinity is in climate Zone 14 "Northern California's Inland Areas with Some Ocean Influence", with maritime air moderating temperatures that would otherwise be hotter in summer and colder in the winter (Sunset, 2020).

The topography of the Property is a west-facing slope of the foothills of the mountains ringing Clear Lake. The elevation ranges from approximately 1,350 feet to 1,410 feet above mean sea level. Drainage runs east, and flows into Clear Lake. Prior to the establishment of this cultivation operation, land uses were livestock pasture and stables. The Property has had years of heavy use as sheep and cattle pasture.

3. SURVEY METHODOLOGY

Survey methodology followed the following protocols:

- California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.

- U.S. Fish and Wildlife Service. 1996. Guidelines for conducting and reporting botanical inventories for federally listed, proposed and candidate plants. Sacramento Fish and Wildlife Office, Sacramento, California. 2 pp.

- California Native Plant Society. 2001. CNPS botanical survey guidelines.

3.1. PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- Aerial photography of the Project Area (current and historical)
- United States Geologic Service 7.5 degree-minute topographic quadrangles
- USFWS National Wetland Inventory
- USDA Natural Resources Conservation Service soil survey maps
- California Natural Diversity Database (CNDDB), electronically updated monthly by subscription
- California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition).

The following reference sites were visited: Deemed not necessary.

3.2. FIELD SURVEYS

Dates of botanical field surveys (indicating the botanical field surveyor(s) that surveyed each area on each survey date), and total person-hours spent: Tim Nosal, MS., March 30, 2020, majority of day; April 6, 2021, half day; July 7, 2021, half day.

> Note: The qualifications of the botanical field surveyors and report authors are summarized at the end of this report.

Description of Survey Area: The survey area was the project area (the 2-acre cultivation compound plus a possible second cultivation compound of 6 acres , totaling 8 acres) plus a buffer of several hundred feet.

Note: A map of the survey area relative to the project area is shown in the Exhibits.

A variable-intensity pedestrian survey was performed, and modified to account for differences in terrain, vegetation density, and visibility. All visible taxa observed were recorded in a field notebook. Survey efforts emphasized the search for any special-status species that had documented occurrences in the CNDDB within the vicinity of the Project Area and those species on the CNPS or USFWS species lists.

Taxa were identified to the taxonomic level necessary to determine whether or not they are a special status plant. When a specimen could not be identified in the field, a photograph was taken and/or a specimen was pressed and identified in the laboratory using a dissecting scope where necessary. Dr. Graening holds the following scientific collection permits: CDFW Scientific Collecting Permit No. SC-006802; and CDFW Plant Voucher Specimen Permit 09004. Tim Nosal holds CDFW Plant Voucher Specimen Permit 2081(a)-16-102-V. Taxonomic determinations were facilitated by referencing museum specimens or by various texts, including the following: Powell and Hogue (1979); Pavlik (1991); (1993); Brenzel (2012); Stuart and Sawyer (2001); Lanner (2002); Sibley (2003); Baldwin et al. (2012); Calflora (2021); CDFW (2021b,c); NatureServe 2021; and University of California at Berkeley (2021a,b).

3.3. MAPPING AND OTHER ANALYSES

The locations of any special-status species or vegetation communities sighted were marked on aerial photographs and/or georeferenced with a geographic positioning system (GPS) receiver. Vegetation community types occurring in the Survey Area were mapped on aerial photographs, and information on habitat conditions and the suitability of the habitats to support special-status species was also recorded. Locations of any species' occurrences and sensitive natural community boundaries detected within the Project Area were digitized to produce the final maps. Geographic analyses were performed using geographical information system software (ArcGIS 11, ESRI, Inc.). Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified by Vegetation Series (distinctive associations of plants, described by dominant species and particular environmental setting) using the CNPS Vegetation Classification system (Sawyer and Keeler-Wolf, 1995). Species' habitat requirements and life histories were identified using the following sources: Baldwin et al. (2012); CNPS (2021), Calflora (2021); CDFW (2021a,b,c); and University of California at Berkeley (2021a,b).

3.4. Previous Studies

The following previous studies have been performed:

- Natural Investigations Co. 202x. Biological Resources Assessment for the Cannabis Cultivation Operation at 1111 Sulphur Bank Drive, Clearlake Oaks, California

Natural Investigations Company conducted a botanical survey during the biological resources assessment. No special-status plant species were detected within the Project Area or the surrounding Property.

3.5. List of Sensitive Natural Communities with Potential to Occur in the Region

According to the results of a spatial query of the CNDDB, there are no reported no special-status habitats within the Project Area or surrounding Property boundary. Within the surrounding region (County-level), the CNDDB has mapped the following special-status habitats: Serpentine Bunchgrass; Northern Volcanic Ash Vernal Pool; Coastal and Valley Freshwater Marsh; Northern Basalt Flow Vernal Pool; Northern Volcanic Ash Vernal Pool; Northern Interior Cypress Forest; and Northern Vernal Pool.

Within the surrounding region, the following California Sensitive Natural Communities occur (listed in higher-order primary life forms: CDFG 2003; CDFW 2019):

- 32.000.00 Coast Scrub
  - 32.xxx.xx scrub with dominant *Artemisia*, Baccharis, *Eriogonum*, etc.
- 37.000.00 Chaparral
  - 37.1xx.xx Chamise Chaparral [*Adenostoma fasciculatum*]
  - 37.2xx.xx Chaparral with *Ceanothus* as principal indicator
  - 37.3xx.xx Chaparral with Manzanita [*Arctostaphylos* spp.] as principal indicator
  - 37.4xx.xx Chaparral with Oak [*Quercus* spp.] as principal indicator
- 40.000.00 Grass & Herb Dominated Communities
  - 41.xxx.xx Native Grassland
- 42.000.00 Non-native Grassland
  - certain rare associations
- 44.000.00 Vernal pools
  - all associations
- 45.000.00 Meadow and seeps not dominated by grasses
  - 45.11x.xx *Carex* marsh, meadow
  - 45.2xx.xx *Eleocharis* marsh, meadow
- 52.000.00 Marsh
  - all associations
- 60.000.00 Riparian and bottomland habitat
  - all associations
- 71.000.00 Oak Woodlands and Forests
  - 71.100.15 *Quercus agrifolia – Quercus garryana – Quercus kelloggii*
  - 71.060.xx Coast live oak woodland and forest
  - 71.050.xx Canyon live oak forest and woodland
  - 71.020.xx Blue oak woodland and forest
  - 71.070.xx Engelmann oak woodland and forest
  - 71.040.xx Valley oak woodland and forest
  - 71.080.xx Interior live oak woodland and forest
- 72.000.00 Upland Walnut Woodlands and Forests [*Juglans* spp.]
- 73.000.00 Tanoak Forest and Woodland
- 73.200.00 Pacific Madrone [*Arbutus menziesii*]

- 74.000.00 California bay forest and woodland
- 75.000.00 California Buckeye Woodland [*Aesculus* californica]
- 80.000.00 Coniferous Upland Forest and Woodland
    - various associations of *Calocedrus*, *Pinus*, or *Abies*

No sensitive natural communities were identified that could occur specifically in the Project Area. Some of these sensitive natural communities occur outside the Project Area on the Property.

3.6. List of Special Status Plants with Potential to Occur in the Region

A list of special-status plant species with potential to occur in the region was compiled based upon the following (see Appendix):

- A spatial query of the CNDDB using a 10-mile buffer around the Property boundary.
- A 9-quadrangle query of the California Native Plant Society's database *Inventory of Rare and Endangered Plants of California* (online edition).

The databases were queried and any reported occurrences of special-status species were plotted in relation to the Project Area boundary using GIS software (see exhibits). The CNDDB reported one special-status species occurrences within the Property—eel-grass pondweed (*Potamogeton zosteriformis*)—but this is an artifact of the mapping process. The collection record is: "*CLEAR LAKE NEAR WYGALS RESORT AT SOUTH END OF LAKE. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN GENERAL VICINITY OF SOUTH END OF CLEAR LAKE*." Suitable habitat for eel-grass pondweed does not occur on the Property. Within a 10-mile buffer of the Property boundary, the CNDDB reported several special-status species occurrences, summarized in the Appendix.

The Project Area contains the following habitat type: annual grassland on soil derived from alluvium from sedimentary parent material. The Project Area contains suitable habitat for the following special-status plant species: Bent-flowered fiddleneck (*Amsinckia lunaris*) and Oval-leaved viburnum (*Viburnum ellipticum*). Outside the Project Area, and on the surrounding Property, the oak woodland habitat has a moderate potential to sustain special-status species. The ponds are not permanent waterbodies, and are unlikely to sustain aquatic special-status species.

4. RESULTS

4.1. LIST OF PLANT TAXA DETECTED DURING FIELD SURVEY(S)

All plant taxa detected during the botanical field surveys are listed in the following table. During the botanical field surveys, no special-status plant taxa were detected within the Project Area.

Deposition locations of voucher specimens: n/a

Plants Observed at 1111 Sulphur Bank Drive, Clearlake on March, 30, 2020, April 6, 2021, and July 7, 2021

Common Name	Scientific Name
California buckeye	*Aesculus californicus*
Red root pigweed	*Amaranthus retroflexus*
Common fiddleneck	*Amsinckia menziesii*
Bur-chervil	*Anthriscus caucalis*
Slender wild oat	*Avena barbata*
Cultivated oat	*Avena sativa*
Common blennosperma	*Blennosperma nanum var. nanum*
Mustard	*Brassica sp*
Brodiaea	*Brodiaea sp.*
Ripgut brome	*Bromus diandrus*
Soft chess	*Bromus hordeaceus*
Red maids	*Calandrinia menziesii*
Marijuana	*Cannabis sp.*
Shepherd's purse	*Capsella bursa-pastoris*
Western bittercress	*Cardamine oligosperma*
Italian thistle	*Carduus pycnocephalus*
Field owl's clover	*Castilleja campestris*
Yellow star thistle	*Centaurea solstitialis*
Common mouse-eared chickweed	*Cerastium fontanum*
Sticky mouse-eared chickweed	*Cerastium glomeratum*
Western redbud	*Cercis occidentalis*
Lamb's quarters	*Chenopodium album*
Wavy leaved soap plant	*Chlorogalum pomeridianum*
Bull thistle	*Cirsium vulgare*
Miner's lettuce	*Claytonia perfoliata*
Western white clematis	*Clematis ligusticifolia*
Field bindweed	*Convolvulus arvensis*
Dove weed	*Croton setiger*
Bermuda grass	*Cynodon dactylon*
Hedgehog dogtail grass	*Cynosurus echinatus*
Orchard grass	*Dactylis glomerata*
Jerusalem oak goosefoot	*Dysphania botrys*
Pale spikerush	*Eleocharis macrostachya*
Tall willowherb	*Epilobium brachycarpum*
Tufted lovegrass	*Eragrostis pectinacea var. pectinacea*
Broad leaved filaree	*Erodium botrys*
Red-stemmed filaree	*Erodium cicutarium*
White stemmed filaree	*Erodium moschatum*
Tall fescue	*Festuca arundinacea*
Rattail sixweeks grass	*Festuca myuros*
Italian ryegrass	*Festuca perennis*
California coffeeberry	*Frangula californica*

Common Name	Scientific Name
Two petal ash	*Fraxinus dipetala*
Common fumatory	*Fumaria officinalis*
Cleavers	*Galium aparine*
Carolina geranium	*Geranium carolinianum*
Cut leaf geranium	*Geranium dissectum*
Dove's foot geranium	*Geranium molle*
Western marsh cudweed	*Gnaphalium palustre*
Shortpod mustard	*Hirschfeldia incana*
Wand tarplant	*Holocarpha virgata*
Hare wall barley	*Hordeum murinum*
Northern California black walnut	*Juglans hindsii*
English walnut	*Juglans regia*
Prickly lettuce	*Lactuca serriola*
Henbit	*Lamium amplexicaule*
Shining peppergrass	*Lepidium nitidum*
Upright peppergrass	*Lepidium strictum*
Common meadowfoam	*Limnanthes douglasii*
Pink honeysuckle	*Lonicera hispidula*
Miniature lupine	*Lupinus bicolor*
Common mallow	*Malva neglecta*
Cheese weed	*Malva parviflora*
Horehound	*Marrubium vulgare*
Pineapple weed	*Matricaria discoidea*
California burclover	*Medicago polymorpha*
Alfalfa	*Medicago sativa*
Coyote tobacco	*Nicotiana attenuata*
Harding grass	*Phalaris aquatica*
Tomatillo	*Physalis philadelphica*
Pokeweed	*Phytolacca americana*
Pea	*Pisum sp.*
Rusty popcorn flower	*Plagiobothrys nothofulvus*
Popcorn flower	*Plagiobothrys sp.*
English plantain	*Plantago lanceolata*
Annual bluegrass	*Poa annua*
Bulbous bluegrass	*Poa bulbosa*
Kentucky bluegrass	*Poa pratensis*
Knot grass	*Polygonum arenastrum*
Purslane	*Portulaca oleracea*
Yellow devil's claw	*Proboscidea lutea*
Sierra plum	*Prunus subcordata*
Blue oak	*Quercus douglasii*
Valley oak	*Quercus lobata*
Interior live oak	*Quercus wislizeni var. wislizeni*
Western buttercup	*Ranunculus occidentalis*
Buttercup	*Ranunculus sp.*

Common Name	Scientific Name
Holly leaf redberry	*Rhamnus ilicifolia*
Himalayan blackberry	*Rubus armeniacus*
Dock	*Rumex sp.*
Blue elderberry	*Sambucus nigra ssp. caerulea*
Hardstem bulrush	*Schoenoplectus acutus*
California beeplant	*Scrophularia californica*
Old man of spring	*Senecio vulgare*
Milk thistle	*Silybum marinum*
Tumble mustard	*Sisymbrium altissimum*
Sow thistle	*Sonchus oleraceus*
Chickweed	*Stellaria media*
Common snowberry	*Symphoricarpos albus*
Dandelion	*Taraxacum officinalis*
Tall sock destroyer	*Torilis arvensis*
Poison-oak	*Toxicodendron diversilobum*
White clover	*Trifolium repens*
Clover	*Trifolium sp.*
Johnny tuck	*Triphysaria eriantha*
Annual stinging nettle	*Urtica urens*
Common mullein	*Verbascum thapsus*
Field speedwell	*Veronica arvensis*
Bird's-eye speedwell	*Veronica persica*
Spring vetch	*Vicia sativa*

4.2. LIST OF VEGETATION COMMUNITIES DETECTED DURING FIELD SUVERY(S)

The Property contains the following terrestrial vegetation communities, which are discussed here and are delineated in the Exhibits:

Ruderal/Disturbed: These areas consist of disturbed or converted natural habitat that is now either in ruderal state, graded, or urbanized with gravel roads, or structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive species or ornamental plants lacking a consistent community structure. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages.

Annual Grassland: The flatter areas of the Property consists largely of annual grassland habitat, heavily grazed by sheep and cattle. This vegetation is comprised of non-native grasses and native and non-native herbs including hare wall barley (*Hordeum murinum*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), white clover (*Trifolium repens*), shepherd's purse (*Capsella bursa-pastoris*), filaree (*Erodium* spp.), henbit (*Lamium amplexicaule*), Menzies fiddleneck (*Amsinckia menziesii*), and miner's lettuce (*Claytonia perfoliata*). This vegetation can be classified as the Holland Type "Non-native Grassland".

Mixed Oak Woodland: The majority of the Property is vegetated with oak woodland habitat. The open canopy of the woodland is comprised of blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*) and occasional two-petaled ash (*Fraxinus dipetala*). The understory within this habitat consists of poison-oak (*Toxicodendron diversilobum*), hare wall barley, soft chess, ripgut brome, hedgehog dogtail grass (*Cynosurus echinoides*), miner's lettuce (*Claytonia* spp.), milk thistle (*Silybum marinum*), chickweed (*Stellaria media*) and other annual grasses and herbs.. This vegetation can be classified as "*Quercus* (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*) Forest Alliance (Sawyer et al, 2009)" or as the Holland Type "Oak Forest".

More specifically, the following terrestrial natural communities occur in the Project Area (as categorized by CDFW 2019):

- 42.040.000 California Annual Grassland
- 11300 Disturbed Habitat
- 12000 Urban/Developed

In the grassland community, the following species occur in order of dominance: wall barley (*Hordeum murinum*); Broadleaf filaree (*Erodium botrys*); Red-stemmed filaree (*Erodium cicutarium*); Shepherd's purse(*Capsella bursa-pastoris*).

During the botanical field survey, no sensitive vegetation communities were detected within the Project Area.

4.3. Adequacy of Botanical Field Survey(s)

Potential for a false negative botanical field survey: Unlikely since multiple surveys were performed and genera most likely to occur in the Project Area are conspicuous.

Did climatic conditions affect the botanical field survey results? Year 2021 was unusually hot and dry.

Did the timing of botanical field surveys affect the comprehensiveness of botanical field surveys?

Botanical field surveys have been performed in early, middle, and late season, which is very comprehensive. The Project Area contains suitable habitat for the following special-status plant species: Bent-flowered fiddleneck (*Amsinckia lunaris*) and Oval-leaved viburnum (*Viburnum ellipticum*). One species of fiddleneck was observed within the Project Area – common fiddleneck (*Amsinckia menziesii*). This species was in flower and identification was made with a high degree of confidence. No other species of *Amsinckia* were observed on the property. No species of *Viburnum* were observed within the property. No special status plant species were observed. It is unlikely that special status plant species are present within the Project Area. Additional botanical field surveys are not deemed necessary.

5. POTENTIAL PROJECT IMPACTS

5.1. Special-status Plant Populations

The Project Area contains suitable habitat for the following special-status plant species: Bent-flowered fiddleneck (*Amsinckia lunaris*) and Oval-leaved viburnum (*Viburnum ellipticum*). No special-status plant species were detected in the Project Area during the botanical field surveys. The non-native grasslands within the Project Area have a low potential for harboring special-status plant species due to the dominance of aggressive non-native grasses and forbs. The Project Area is a sheep pasture that has been heavily grazed for decades. In addition, much of the Project Area has been converted to cannabis cultivation. It is unlikely that special status plant species are present within the Project Area. Additional special status plant surveys are not deemed necessary. Special-status species are more likely to occur in sensitive and rare habitats, which are lacking in the Project Area. Sensitive / special-status habitats were detected within the Property in the following areas: the ponds and the oak woodland habitat. However, project implementation will not affect these habitats. Thus, implementation of the proposed project will not directly impact any known special status plant population.

Indirect impacts could occur from the loss of suitable habitat for regionally-occurring special-status species. The Project Area contains the following general habitat types: non-native annual grassland; and urbanized. Cattle and sheep grazing have degraded the habitat quality in the Project Area. The Project Area contains no sensitive habitats or aquatic habitats such as wetlands or channels, which are more likely to harbor rare plants. Some regionally-occurring special-status species can utilize the habitat types in the Project Area. However, project implementation will have a less-than significant impact upon habitat loss for regionally-occurring special-status species for numerous reasons. Ground disturbance will occur on less than 20 percent of the Property. This leaves the majority of the natural habitats undisturbed on the Property. Cattle grazing has degraded the habitat quality in the Project Area, making it less suitable for special-status species. Finally, the majority of regionally-occurring special-status species require habitat types that will not be disturbed, such as riparian, wetland, chaparral, and serpentine soil. For these reasons, project implementation will have a less than significant indirect or cumulative impact upon special-status species.

5.2. Sensitive Natural Communities

The Project Area does not contain any sensitive natural community type. Project implementation will have a less-than significant impact upon sensitive natural communities for numerous reasons. Sensitive natural communities on the Property were avoided in project design of cultivation compound locations, including aquatic buffers of at least 100 feet. Project implementation will not involve removal of significant amount of oak trees. Although project implementation may disturb some oak woodland community, the vast majority of oak woodland communities on the Property will not be disturbed or involved in the project. For these reasons, project implementation will have a less than significant impact (direct, indirect, and cumulative) upon sensitive natural communities.

6. MITIGATION MEASURES / RECOMMENDATIONS

The project proponents and cultivators implemented mitigation by design. Mitigation has been employed in the design phase by inventorying sensitive habitats and water resources on the Property and then avoiding all sensitive habitats in selection of cultivation compound locations and sizes. The cultivation compounds were designed with minimum of 100-foot setbacks from all aquatic habitats (ponds, channels and wetlands) and the avoidance of sensitive terrestrial habitats. The project design also includes vegetative buffers between cultivation compounds and sensitive habitats, and an erosion control plan and pollution prevention plan will be implemented. For these reasons, no additional mitigation measures are deemed necessary.

No special status plant species were observed within the Property on 3 different survey dates spread out over the entire botanical season. It is unlikely that special status plant species are present within the Project Area. Additional special status plant surveys are deemed not necessary.

7. QUALIFICATIONS OF BOTANICAL FIELD SURVEYORS AND REPORT AUTHORS

G.O. GRAENING, Ph.D., M.S.E.
Dr. Graening holds a PhD in Biological Sciences and a Master of Science in Biological and Agricultural Engineering. Dr. Graening is an adjunct Professor at California State University at Sacramento, and is an active researcher in the area of conservation biology; his publication list is available online at http://www.csus.edu/indiv/g/graeningg/pubs.htm. Dr. Graening is also a Certified Arborist (ISA # WE-6725A). Dr. Graening has 24 years of experience in environmental assessment, including previous employment with The Nature Conservancy, Tetra Tech Inc., and CH2M Hill, Inc.

TIMOTHY R. D. NOSAL, M.S.
Mr. Nosal holds a B.S. and M.S. in Biological Sciences. Mr. Nosal has statewide experience performing sensitive plant and animal surveys in addition to terrestrial vegetation investigations. Mr. Nosal has over 25 years of experience in botanical surveys, environmental assessment, and teaching with employers that include California Department of Fish and Wildlife, State Water Resources Control Board, American River College, MTI College and Pacific Municipal Consultants. Mr. Nosal has intensive experience with the flora of the Pine Hill region includes leading numerous field trips exploring the botany of the region, co-authoring a fuel management plan for Pine Hill, and a Master's thesis on Stebbins's morning glory (*Calystegia stebbinsii*), an endangered plant of this region.

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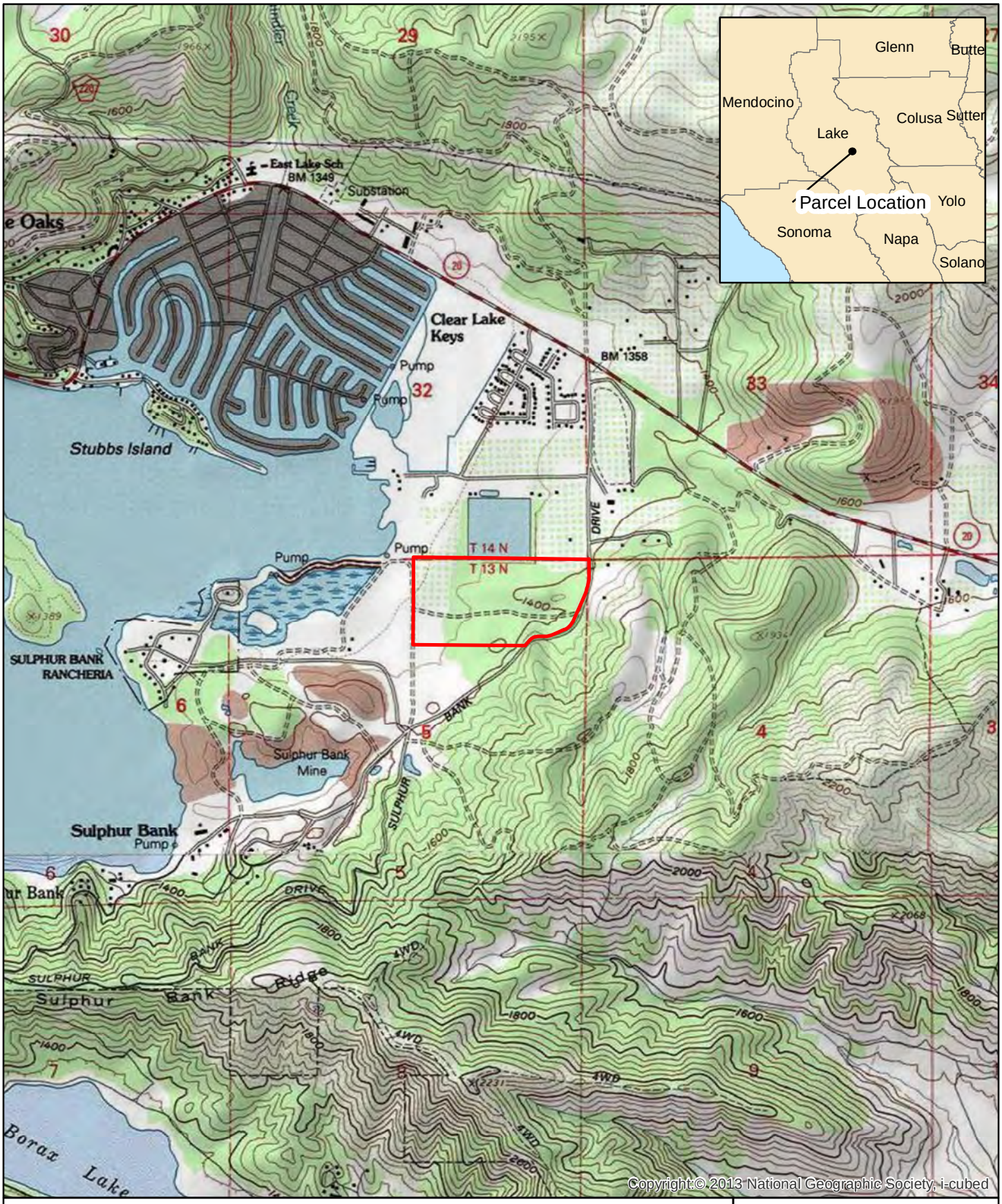
EXHIBITS



Parcel Location

0 0.5 1 Kilometers

0 0.5 1 Miles

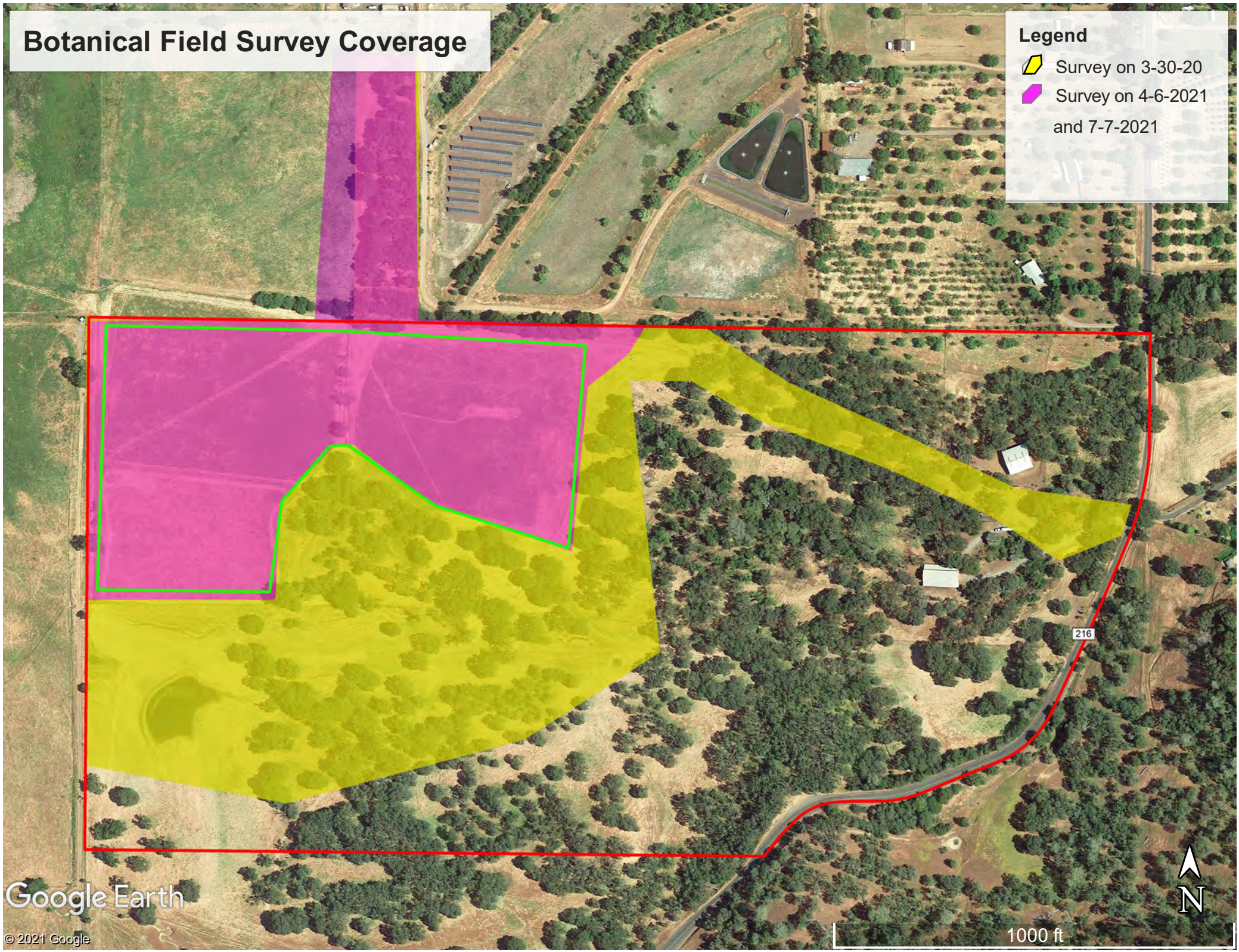
1:24,000

1111 Sulphur Bank Drive
Parcel Location Map

NATURAL INVESTIGATIONS COMPANY

Map Date 3/20/2020

Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5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Legend
Survey on 3-30-20
Survey on 4-6-2021
and 7-7-2021
216
Google Earth
© 2021 Google
1000 ft
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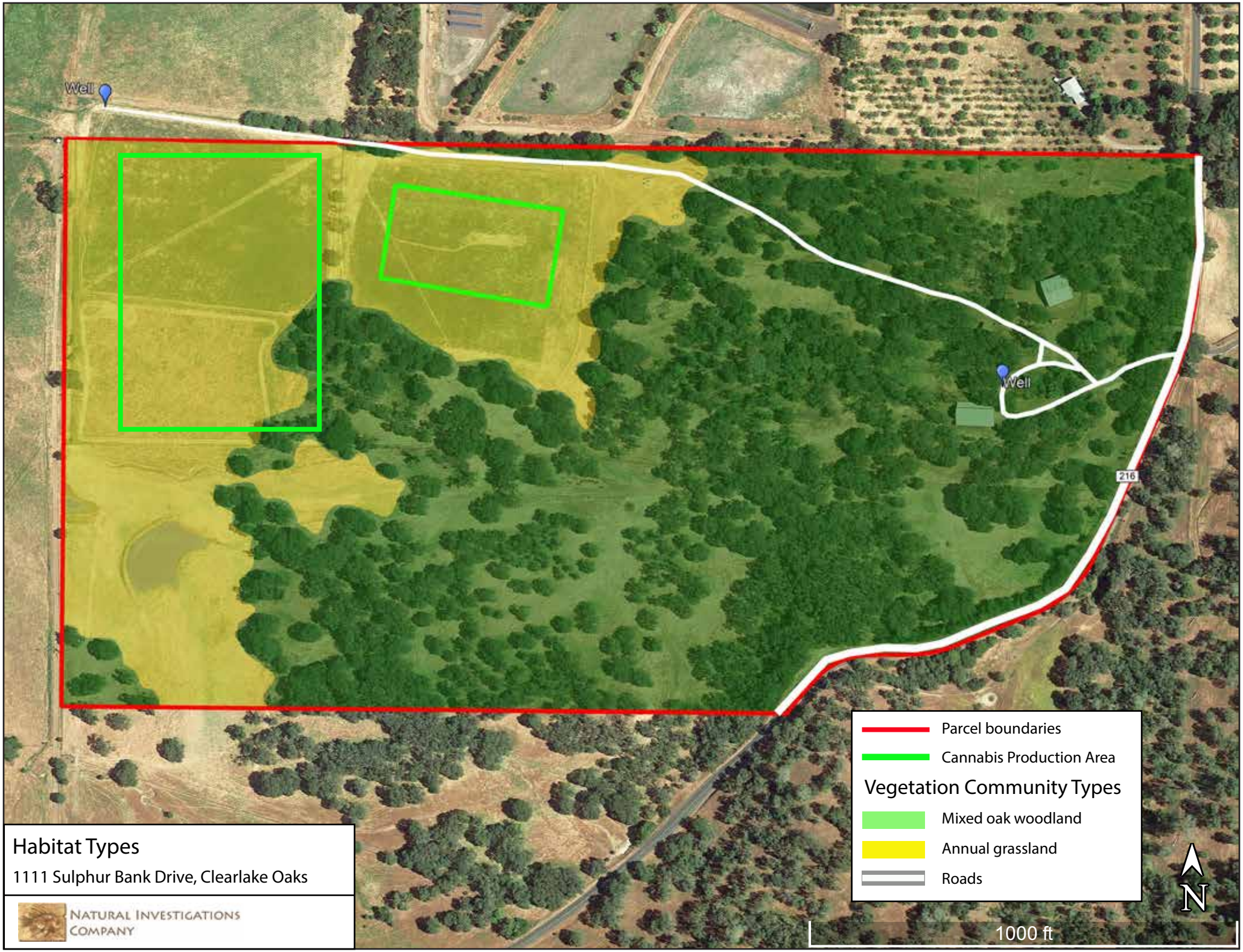
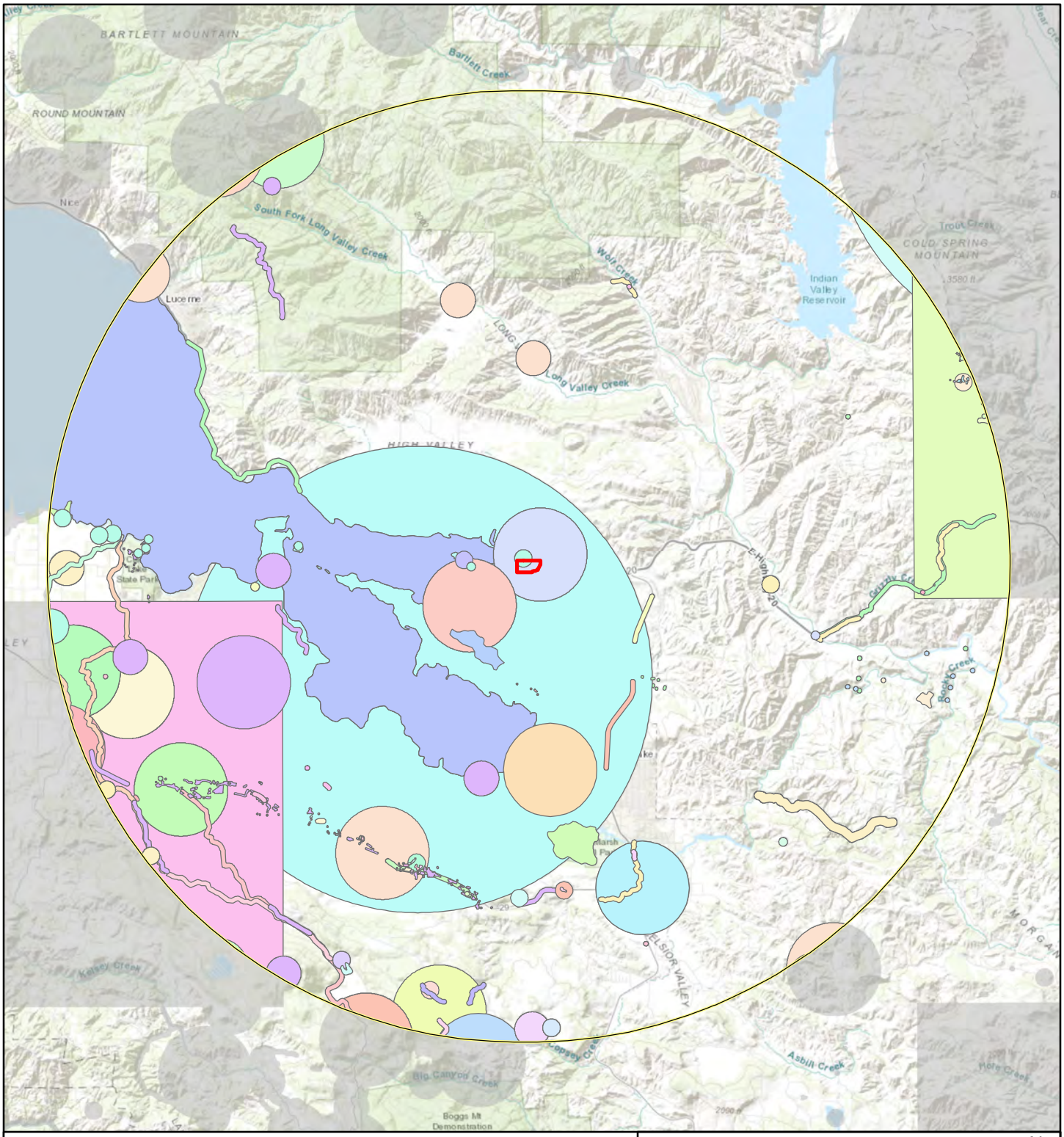


Habitat Types

1111 Sulphur Bank Drive, Clearlake Oaks

Natural Investigations Company



Parcel Location 10 Mile Buffer

1:190,000 1 inch = 3 miles

0 3 6 Miles

N

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist inshowing features discussed in an attached document. Natural Investigations Company can not guarantee the accuracy and content of electronic files.The master file is stored by Natural Investigations Company and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.Data Sources: California Department of Fish and Wildlife. 2020. RareFind 5.x, California Natural Diversity Data Base. Biogeographic Data Branch, Sacramento, California.
(updated monthly by subscription service)

Special-Status Species Occurrences Map

1111 Sulphur Bank Drive

Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5

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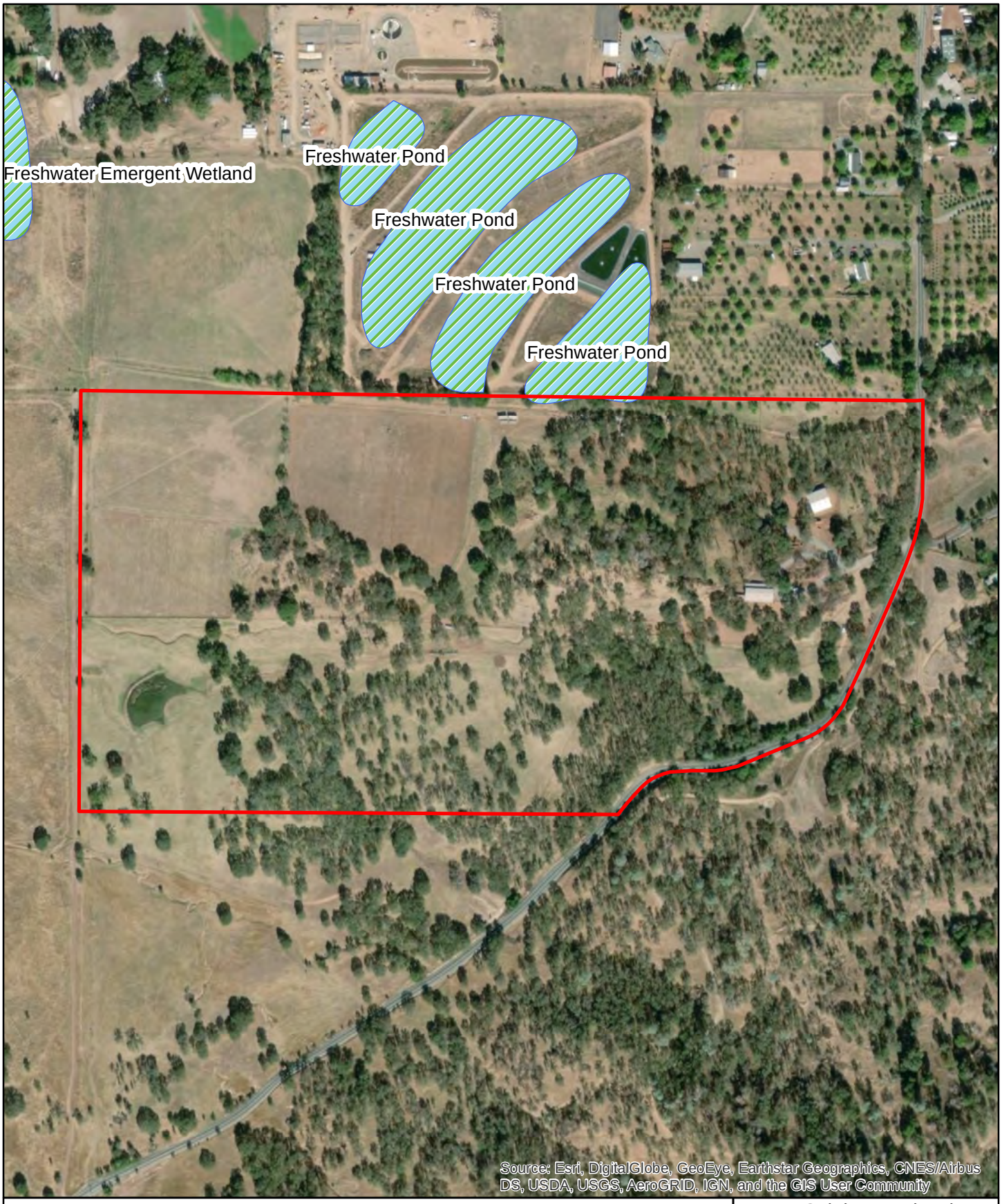


Parcel Location

Wetlands and Channels

0 125 250 Meters

0 500 1,000 Feet

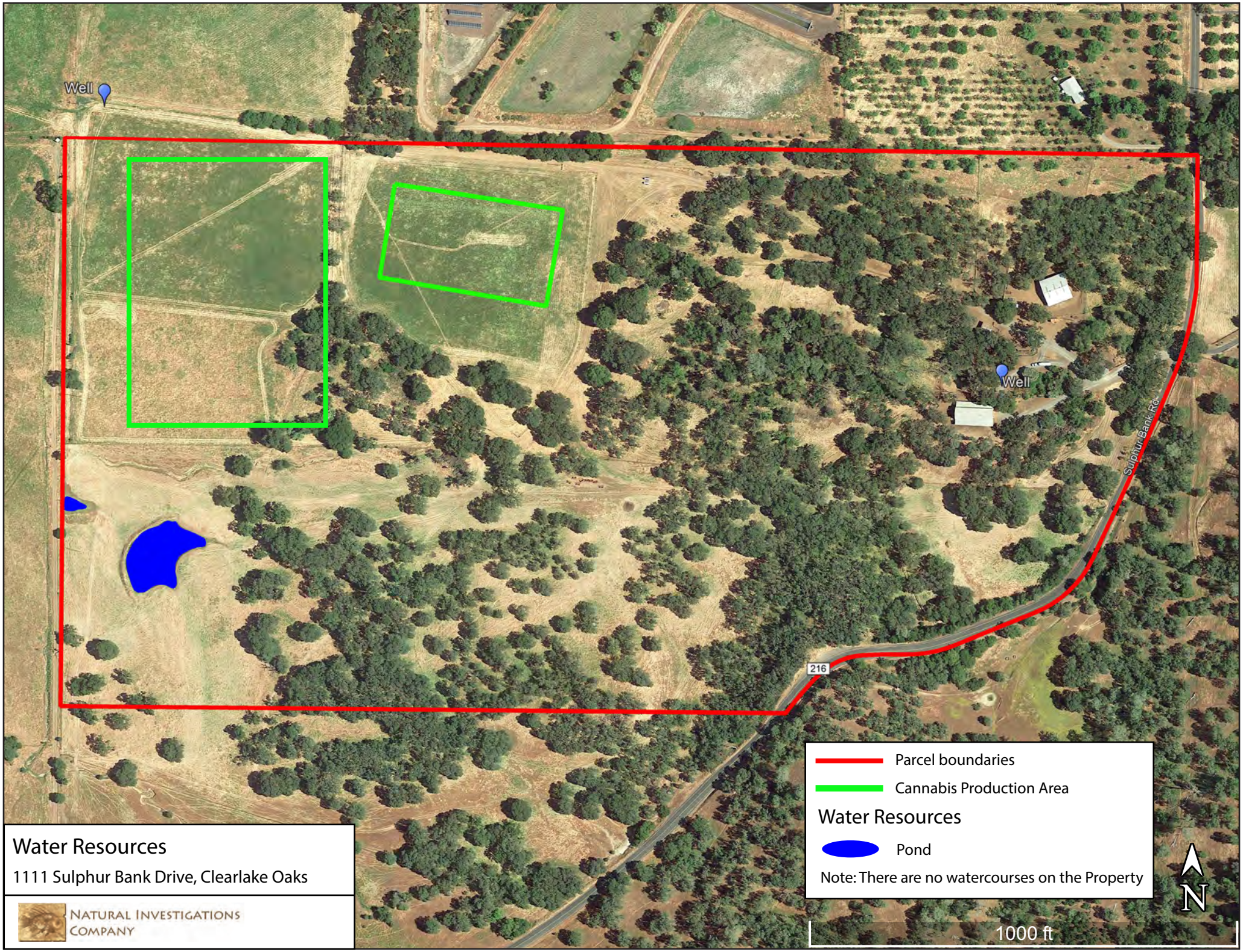
1:5,000

1111 Sulphur Bank Drive
National Wetlands Inventory
Features Map

Natural Investigations Company

Map Date 3/20/2020

Clearlake Oaks 1996 Quadrangle:Township 13N, Range 7W, Section 5


Well
Well
Sulphur Bank Rd
216
Parcel boundaries
Cannabis Production Area
Water Resources
Pond
Note: There are no watercourses on the Property
N
1000 ft
Water Resources
1111 Sulphur Bank Drive, Clearlake Oaks
Natural Investigations Company

APPENDIX: CNDDB AND CNPS SPECIES LISTS

Special-status Species Reported by CNDDB in the Vicinity of the Project Area

Common Name Scientific Name	Status*	General Habitat	Microhabitat
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Vernal pools.	Volcanic ash flow vernal pools. 460-855 m.
Small-flowered calycadenia *Calycadenia micrantha*	1B.2	Chaparral, valley and foothill grassland, meadows and seeps.	Rocky talus or scree; sparsely vegetated areas. Occasionally on roadsides; sometimes on serpentine. 5-1500 m.
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	Chaparral.	Serpentine and volcanic substrates, generally in shrubby vegetation. 80-1005 m.
Pappose tarplant *Centromadia parryi ssp. parryi*	1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland.	Vernally mesic, often alkaline sites. 2-420m.
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Vernal pools, meadows and seeps.	Most often in vernal pools and swales. 15-600 m.
Colusa layia *Layia septentrionalis*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Scattered colonies in fields and grassy slopes in sandy or serpentine soil. 145-1095m.
Hall's harmonia *Harmonia hallii*	1B.2	Chaparral.	Serpentine hills and ridges. Open, rocky areas within chaparral. 500-900 m.
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Cismontane woodland, valley and foothill grassland.	50-500m.
Watershield *Brasenia schreberi*	2B.3	Freshwater marshes and swamps.	Aquatic from water bodies both natural and artificial in California.
Cascade downingia *Downingia willamettensis*	2B.2	Cismontane woodland, valley and foothill grasslands.	Lake margins and vernal pools.
Legenere *Legenere limosa*	1B.1	Vernal pools.	In beds of vernal pools. 1-880 m.
San Joaquin spearscale *Extriplex joaquinana*	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland.	In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 1-835 m.
Oval-leaved viburnum *Viburnum ellipticum*	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland.	Level areas that are seasonally wet and dry out in late spring; substrate usually of volcanic origin. 365-790 m.
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	1B.1	Chaparral, lower montane coniferous forest.	Rocky, serpentine sites. Slopes and ridges. 450-1000 m.
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	Chaparral, cismontane woodland, lower montane coniferous forest.	Volcanic soils. 395-1615 m.
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Cismontane woodland, valley and foothill grassland, chaparral.	Commonly on serpentine in grassland or openings in chaparral. 180-1000 m.
Anthony Peak lupine *Lupinus antoninus*	1B.2	Upper montane coniferous forest, lower montane coniferous forest.	Open areas with surrounding forest; rocky sites. 1220-2285 m.
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Chapparal, cismontane woodland, valley and foothill grassland, vernal pools.	Vernally wet areas, ditches, and ponds. 60-1335 m.
Glandular western flax *Hesperolinon adenophyllum*	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils; generally found in serpentine chaparral. 150-1315 m.
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	Serpentine chaparral.	Serpentine barrens at edge of chaparral. 60-1005 m.
Drymaria-like western flax *Hesperolinon drymarioides*	1B.2	Closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland.	Serpentine soils, mostly within chaparral. 390-1000m.
Sharsmith's western flax *Hesperolinon sharsmithiae*	1B.2	Chaparral.	Serpentine substrates. 270-300 m.

Marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	1B.2	Meadows and seeps, riparian forest.	Wet soil of streambanks, meadows. 1100-2300 m.
Brandegee's eriastrum *Eriastrum brandegeeae*	1B.1	Chaparral, cismontane woodland.	On barren volcanic soils; often in open areas. 425-840 m.
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils. 5-1740 m.
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	Vernal pools.	Volcanic ash flow, and volcanic substrate vernal pools. 400-855 m.
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	Vernal pools.	Volcanic ash flow vernal pools. 30-950 m.
Bolander's horkelia *Horkelia bolanderi*	1B.2	Lower montane coniferous forest, chaparral, meadows, valley and foothill grassland.	Grassy margins of vernal pools and meadows. 450-1100 m.
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Chaparral, meadows and seeps, valley and foothill grassland.	Openings in chaparral or grasslands. On serpentine. 20-900 m.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Marshes and swamps (freshwater), vernal pools.	Clay soils; usually in vernal pools, sometimes on lake margins. 10-2375 m.
Adobe-lily *Fritillaria pluriflora*	1B.2	Chaparral, cismontane woodland, foothill grassland.	Usually on clay soils; sometimes serpentine. 60-705 m.
California satintail *Imperata brevifolia*	2B.1	Coastal scrub, chaparral, riparian scrub, Mojavean scrub, meadows and seeps (alkali), riparian scrub.	Mesic sites, alkali seeps, riparian areas. 0-1215 m.
Eel-grass pondweed *Potamogeton zosteriformis*	2B.2	Marshes and swamps.	Ponds, lakes, streams. 0-1860 m.

*Definitions of Status Codes: FE = Federally listed as endangered; FT = Federally listed as threatened; FPE = Federally proposed for listing as endangered; FPT = Federally proposed for listing as threatened; FC = Candidate for Federal listing; MB = Migratory Bird Act; CE = California State listed as endangered; CT = California State listed as threatened; CSSC = California species of special concern; CR = California rare species; CFP = California fully protected species; CNPS (California Native Plant Society) List 1A = Plants presumed extinct in California by CNPS; CNPS List 1B = CNPS designated rare or endangered plants in California and elsewhere; and CNPS List 2 = CNPS designated rare or endangered plants in California, but more common elsewhere. Global Ranking: G1 = Critically Imperiled; G2 = Imperiled; G3 = Vulnerable. State Ranking: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.

**Copied verbatim from CNDDB, unless otherwise noted.

Special-status Species Reported by CNP in the Vicinity of the Project Area (9-quadrangle Area)

Common name *Scientific name*	**Status**	**Bloom**	**Habitat**
Bent-flowered fiddleneck *Amsinckia lunaris*	1B.2	Mar-Jun	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland
Twig-like snapdragon *Antirrhinum virga*	4.3	Jun-Jul	Chaparral, Lower montane coniferous forest
Konocti manzanita *Arctostaphylos manzanita ssp. elegans*	1B.3	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest
Raiche's manzanita *Arctostaphylos stanfordiana ssp. raichei*	1B.1	Feb-Apr	Chaparral, Lower montane coniferous forest (openings)
Serpentine milkweed *Asclepias solanoana*	4.2	May-Jul(Aug)	Chaparral, Cismontane woodland, Lower montane coniferous forest
Brewer's milk-vetch *Astragalus breweri*	4.2	Apr-Jun	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (open, often gravelly)
Cleveland's milk-vetch *Astragalus clevelandii*	4.3	Jun-Sep	Chaparral, Cismontane woodland, Riparian forest
Jepson's milk-vetch *Astragalus rattanii var. jepsonianus*	1B.2	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland
Mexican mosquito fern *Azolla microphylla*	4.2	Aug	Marshes and swamps (ponds, slow water)
Big-scale balsamroot *Balsamorhiza macrolepis*	1B.2	Mar-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland
Watershield *Brasenia schreberi*	2B.3	Jun-Sep	Marshes and swamps (freshwater)
Indian Valley brodiaea *Brodiaea rosea ssp. rosea*	CE/3.1	May-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland
Pink star-tulip *Calochortus uniflorus*	4.2	Apr-Jun	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest
Small-flowered calycadenia *Calycadenia micrantha*	1B.2	Jun-Sep	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland
Four-petaled pussypaws *Calyptridium quadripetalum*	4.3	Apr-Jun	Chaparral, Lower montane coniferous forest
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	4.2	Apr-Jun	Chaparral, Lower montane coniferous forest, Valley and foothill grassland
Three-fingered morning-glory *Calystegia collina ssp. tridactylosa*	1B.2	Apr-Jun	Chaparral, Cismontane woodland
Porcupine sedge	2B.1	May-Jun	Marshes and swamps (streambanks)

Common name *Scientific name*	**Status**	**Bloom**	**Habitat**
Carex hystericina			
Klamath sedge *Carex klamathensis*	1B.2		Chaparral, Cismontane woodland, Meadows and seeps
Pink creamsacs *Castilleja rubicundula var. rubicundula*	1B.2	Apr-Jun	Chaparral (openings), Cismontane woodland, Meadows and seeps, Valley and foothill grassland
Rincon Ridge ceanothus *Ceanothus confusus*	1B.1	Feb-Jun	Closed-cone coniferous forest, Chaparral, Cismontane woodland
Dwarf soaproot *Chlorogalum pomeridianum var. minus*	1B.2	May-Aug	Chaparral (serpentinite)
Tracy's clarkia *Clarkia gracilis ssp. tracyi*	4.2	Apr-Jul	Chaparral (openings, usually serpentinite)
Serpentine collomia *Collomia diversifolia*	4.3	May-Jun	Chaparral, Cismontane woodland
Serpentine bird's-beak *Cordylanthus tenuis ssp. brunneus*	4.3	Jul-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland
Serpentine cryptantha *Cryptantha dissita*	1B.2	Apr-Jun	Chaparral (serpentinite)
Swamp larkspur *Delphinium uliginosum*	4.2	May-Jun	Chaparral, Valley and foothill grassland
Brandegee's eriastrum *Eriastrum brandegeeae*	1B.1	Apr-Aug	Chaparral, Cismontane woodland
Tracy's eriastrum *Eriastrum tracyi*	CR/3.2	May-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland
Greene's narrow-leaved daisy *Erigeron greenei*	1B.2	May-Sep	Chaparral (serpentinite or volcanic)
Snow Mountain buckwheat *Eriogonum nervulosum*	1B.2	Jun-Sep	Chaparral (serpentinite)
Tripod buckwheat *Eriogonum tripodum*	4.2	May-Jul	Chaparral, Cismontane woodland
Loch Lomond button-celery *Eryngium constancei*	FE/CE/1B.1	Apr-Jun	Vernal pools
Adobe-lily *Fritillaria pluriflora*	1B.2	Feb-Apr	Chaparral, Cismontane woodland, Valley and foothill grassland
Purdy's fritillary *Fritillaria purdyi*	4.3	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest
Boggs Lake hedge-hyssop *Gratiola heterosepala*	CE/1B.2	Apr-Aug	Marshes and swamps (lake margins), Vernal pools
Hall's harmonia *Harmonia hallii*	1B.2	Apr-Jun	Chaparral (serpentinite)

Common name *Scientific name*	**Status**	**Bloom**	**Habitat**
Glandular western flax *Hesperolinon adenophyllum*	1B.2	May-Aug	Chaparral, Cismontane woodland, Valley and foothill grassland
Two-carpellate western flax *Hesperolinon bicarpellatum*	1B.2	May-Jul	Chaparral (serpentinite)
Lake County western flax *Hesperolinon didymocarpum*	CE/1B.2	May-Jul	Chaparral, Cismontane woodland, Valley and foothill grassland
Drymaria-like western flax *Hesperolinon drymarioides*	1B.2	May-Aug	Closed-cone coniferous forest, Chaparral, Cismontane woodland, Valley and foothill grassland
Sharsmith's western flax *Hesperolinon sharsmithiae*	1B.2	May-Jul	Chaparral
Bolander's horkelia *Horkelia bolanderi*	1B.2	(May)Jun-Aug	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland
California satintail *Imperata brevifolia*	2B.1	Sep-May	Chaparral, Coastal scrub, Mojavean desert scrub, Meadows and seeps (often alkali), Riparian scrub
Burke's goldfields *Lasthenia burkei*	FE/CE/1B.1	Apr-Jun	Meadows and seeps (mesic), Vernal pools
Colusa layia *Layia septentrionalis*	1B.2	Apr-May	Chaparral, Cismontane woodland, Valley and foothill grassland
Legenere *Legenere limosa*	1B.1	Apr-Jun	Vernal pools
Bristly leptosiphon *Leptosiphon acicularis*	4.2	Apr-Jul	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland
Woolly meadowfoam *Limnanthes floccosa ssp. floccosa*	4.2	Mar-May(Jun)	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools
Anthony Peak lupine *Lupinus antoninus*	1B.2	May-Jul	Lower montane coniferous forest, Upper montane coniferous forest
Cobb Mountain lupine *Lupinus sericatus*	1B.2	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest
Heller's bush-mallow *Malacothamnus helleri*	3.3	May-Jul	Chaparral (sandstone), Riparian woodland (gravel)
Mt. Diablo cottonweed *Micropus amphibolus*	3.2	Mar-May	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland
Little mousetail *Myosurus minimus ssp. apus*	3.1	Mar-Jun	Valley and foothill grassland, Vernal pools (alkaline)
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	1B.1	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools
Few-flowered navarretia *Navarretia leucocephala ssp. pauciflora*	FE/CT/1B.1	May-Jun	Vernal pools (volcanic ash flow)

Common name *Scientific name*	**Status**	**Bloom**	**Habitat**
Many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE/CE/1B.2	May-Jun	Vernal pools (volcanic ash flow)
Slender Orcutt grass *Orcuttia tenuis*	FT/CE/1B.1	May-Sep(Oct)	Vernal pools
Howell's broomrape *Orobanche valida ssp. howellii*	4.3	Jun-Sep	Chaparral (serpentinite or volcanic)
Michael's rein orchid *Piperia michaelii*	4.2	Apr-Aug	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest
Eel-grass pondweed *Potamogeton zosteriformis*	2B.2	Jun-Jul	Marshes and swamps (assorted freshwater)
Lake County stonecrop *Sedella leiocarpa*	FE/CE/1B.1	Apr-May	Cismontane woodland, Valley and foothill grassland, Vernal pools
Cleveland's ragwort *Senecio clevelandii var. clevelandii*	4.3	Jun-Jul	Chaparral (serpentinite seeps)
Marsh checkerbloom *Sidalcea oregana ssp. hydrophila*	1B.2	(Jun)Jul-Aug	Meadows and seeps, Riparian forest
Bearded jewelflower *Streptanthus barbiger*	4.2	May-Jul	Chaparral (serpentinite)
Green jewelflower *Streptanthus hesperidis*	1B.2	May-Jul	Chaparral (openings), Cismontane woodland
Marsh zigadenus *Toxicoscordion fontanum*	4.2	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps
Napa bluecurls *Trichostema ruygtii*	1B.2	Jun-Oct	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools
Oval-leaved viburnum *Viburnum ellipticum*	2B.3	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest

APPENDIX: SITE PHOTOS